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Linguistic and Neuropsychological Analysis of Language in Georgian-Speaking Children with Expressive Language Disorder and Autism Spectrum Disorder

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Abstract

The present study aimed to conduct the neuropsychological and linguistic analysis of language in the population of 4-6 years old Georgian-speaking children with expressive language impairment and autism spectrum disorder. The child's speech was assessed through formal testing and during free play in informal situation.

Comparison the data of two nosology and one control groups revealed that the typical difficulty for language disorder is related to the phonological component of the language. In the case of the autistic spectrum, the typical mistake is related to the pragmatic component of language. Both groups differ almost equally in semantic and morpho-syntactic difficulties from children with typical language skills. Also, children with typical language abilities are better able to form their own thoughts, use a variety of multi-word sentences, than the group with an expressive language disorder. On the other hand, although children with autism spectrum disorder make fewer linguistic errors the sentences which they use are relatively short. Their main goal is to get what they want or to express their opinion briefly, without diversity.

The obtained results are fully explained by the linguistic features of the Georgian language and the peculiarities that are characteristic of each nosology.

Keywords: Psychology, Neuropsychology, Language, Linguistics, Language disorder, Autistic spectrum disorder.

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Perception, Objections, Drivers, and Determinants of Sustainability Reporting in the Construction Industry

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Abstract

The widespread adoption of sustainability reporting has prompted researchers to allocate more attention to the subject. Since the United Nations development of Sustainable Development Goals was published in 2016, a growing body of literature recognises the importance of sustainability reporting. However, divergent viewpoints and a wide range of existing studies highlight the need for a greater understanding of current contributions to the subject. Furthermore, the uniqueness of Sustainability Reporting (SR) necessitates the definition of as-yet-unexplored fields in this field of study. This study aims to revitalise SR research and provide new insights by implementing a rigorous investigation in the construction sector. For that purpose, this study conducted 31 semi-structured interviews to explore the determinants, motives and perceptions of SR and enhance understanding of the complex landscape of SR in the construction industry. The findings reveal the notion of value creation, internal and qualitative factors, the content and quality of SR, and its outcomes. This study contributes to the field of knowledge by providing a conceptual framework indicating complex socio-cultural barriers and incentives considering the impact of internal factors (cultural and perceptions) with external factors (policy, crisis and competitiveness). Substantially this study assists with the policymaking and the most suitable approach to implementing new laws and regulations in the construction industry.

Keywords: Sustainability reporting, ESG reporting, Construction industry, CSR.

The Effect of the Covid-19 Pandemic on the Use of Urban Rail Public Transportation by Individuals Living in Istanbul

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Abstract

The coronavirus (SARS-CoV-2) pandemic, affected people all over the world has caused behavioral changes that limit people's mobility. One of the factors in the rapid spread of the pandemic is the use of urban public transportation. This research aims to analyze the use of rail public transportation in Istanbul, the province most affected by the pandemic and with the highest population density, after the COVID-19 pandemic according to sex, age and socio-economic vulnerability levels of the districts to investigate how the perception of infection risk affects the public transportation system. Data were collected from a total of 36 million 877 thousand 369 passengers at the departure stations, where rail systems are used 27 districts and 240 stations included lines using monthly data sets from the Istanbul Metropolitan Municipality open data portal. The statistical analysis results of the data showed that the number of new coronavirus (SARS-CoV-2) infections during 2020, both in April, the lowest period, and in November, the highest period, of the urban rail system usage of passengers aged 60 and over compared to passengers aged 60 and under ($p<0.05$), the urban rail system usage of female passengers decreased compared to male passengers ($p<0.05$). In the COVID-19 pandemic, the sharpest decrease was observed in the elderly women group in the use of urban rail systems in all districts in 2020 compared to 2019 ($p<0.05$). The trip numbers of individuals using public transportation in the districts with the lowest vulnerability are higher than those in the districts with the highest vulnerability ($p<0.05$) and districts with high vulnerability ($p<0.05$), respectively. The results show that the pandemic affects the mobility of women and the elderly. Individuals' use of public transport with the pandemic differs due to the fact that they are affected by the socio-economic vulnerability levels of the districts they live in.

Keywords: COVID-19, elderly women, rail public transportation, socio-economic vulnerability.

Ascending Utilization of MOOCs in Higher Education During COVID-19 Pandemic

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Abstract

The virus outbreak in 2020 announced as COVID-19 by the World Health Organization has caused online education platforms to be deployed widely around the world. According to UNESCO, almost 1.5 billion face-to-face learners have been affected by the closure of schools at the peak of the crisis. Over time, these circumstances have put the paving for the replacement of face-to-face learning with online learning. Hence, some countries have shifted to distance teaching/learning platforms compatible with their internet infrastructure at different education levels.

The rapid developments in Information and Communication Technologies (ICT) have given a solid foundation for revolutionary changes in distance education. Due to improvements in web technologies like Web 2.0, distance education has been delivered in different modes. As one of the modes of distance education/learning, the first sample of massive open online courses (MOOCs) has been performed on the web in 2008. Over time, interest in massive open online courses has grown fast and continuously worldwide. Universities have started to deliver distance education courses on MOOC platforms since 2012 in many countries. Roughly ten years ago, over 300 thousand learners were taking the three free Stanford courses. Throughout the pandemic, MOOC platforms have been assigned to higher education institutes by MOOC providers to respond to the collapse in education in a short time. In 2021, MOOCs providers launched over 19400 courses for universities reaching 220 million learners all over the world, excluding China. Reports on COVID-19 show that the utilization of MOOCs will proceed in an ascending way at all levels of education.

Keywords: Covid-19, Distance Education, Massive Open Online Course, Online Learning.

Equality and Diversity in Secondary Education in England

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Abstract

Education influences considerably the development and the outline of a society; therefore, the school has a crucial role in supporting our diverse society and contributes a great deal in the development of students' attitudes, values and knowledge. The aim of this qualitative study is to undertake an enquiry to investigate the provision of equality and diversity in secondary schools in England.

The requirement for the implementation of equality and diversity in education, in terms of sex, race, disability, pregnancy, as well as religion and belief, as per the in Equality Act 2010, has engendered a growing interest amongst researchers.

This presentation is based on work carried out during my doctoral research study at Brunel University London into equality and diversity in secondary schools in England. Taking a social constructivist approach to this research, this presentation explores teachers' perceptions and experiences of their enactment of equality and diversity in their practice, in an effort to achieve equality in education for all.

The findings are stemmed from semi-structured interviews with twenty-five secondary school teachers, including Head teachers, Senior Leadership team and Teachers across different subjects, in different state funded schools in London. A thematic analysis approach based on the work of Braun and Clark (2008) was used to analyse the interviews and themes were inductively developed.

The findings outline and nuances teachers' practice to ensure equality and diversity in their practice which was found mainly within the National Curriculum, in active citizenship and finally, in support for students' academic success.

This presentation will display the research's result and discussion to explore and understand teachers' perspectives and experiences of the enactment of equality and diversity in secondary education.

Women's Entrepreneurship and Leadership Discourses through Cultural Barriers of Digitalisation Era

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Abstract

Social development, culture and discourses, and various policies continue to affect women's entrepreneurship rather than individual development. Understanding the role played by social, cultural, and economic factors is key to understanding how to foster entrepreneurial behaviour. Increasing the number of women in leadership as employers and entrepreneurs are imperative when creating an inclusive, accessible, and successful future for Humanity in today's tech world.

Considering the social, economic, and cultural context where female entrepreneurship intersects with digital participation, developments in information and communication technologies offer unexpected and egalitarian opportunities for women entrepreneurs where limited circumstances no longer limit them. Therefore, supporting women entrepreneurs by creating or using digital opportunities will transform future generations and even society. The fact that these opportunities are accessible to everyone with technology is another key. Here, I will share how women entrepreneurs are supported and transformed by digitising, sharing information, experience and normalizing women's discourses and identities.

The Study of Quantum Mechanics through Artificial Intelligence and its Path to Quantum Integration

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Abstract

Combining artificial intelligence with a quantum computer will accelerate and greatly change our daily lives. With the unique features of quantum computing, obstacles to achieve AGI (Artificial General Intelligence) can be eliminated. Quantum computing can be used for the rapid training of machine learning models and to create optimized algorithms. Quantum AI is one of the most likely solutions for next-generation AI. The paper gives a really brief introduction to fundamental QC issues like quantum registers, quantum doors and quantum calculations and after that it presents references, thoughts and investigate rules on how QC can be used to deal with some basic AI problems, such as look and design coordinating, as before long as quantum computers ended up broadly accessible.

The aim of the study is to demonstrate the need for the development of artificial intelligence and to determine its role in quantum mechanics.

The theoretical framework of the paper is used in the existing field Studies (Mathematical Physics Frontiers E.W., Sladkowski; R. P. Feynman, Feynman's Lectures on Computation) Also conducted as part of the study Theoretical experiment /research, in particular I linked artificial intelligence/machine learning algorithms to theories of quantum mechanics, noting the path to quantum integration and its significance in physics.

The research shows that AI techniques can proficiently play out the most troublesome parts of quantum sub-atomic reenactments. Inside the following not many years, AI techniques will secure themselves as a fundamental piece of the disclosure interaction in computational science and sub-atomic physical science. The focal contrast was in the reality that quantum mechanics permits actual frameworks to be in an ensnared express, a peculiarity non-existent in traditional physics. The marriage of AI and quantum material science is an advantageous relationship that could change them both.

Behavioral Finance: Finance with Normal People

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Abstract

Moving the standard finance theory further away from practice has led to increased criticism of standard finance. Much evidence in favor of the absence of perfect investor rationality have called for the need of a new approach and a new point of view offered by behavioral finance. Behavioral finance is under construction as a solid structure of finance. It incorporates parts of standard finance, replaces others, and includes bridges between theory, evidence, and practice. Behavioral finance substitutes normal people for rational people in standard finance. It substitutes behavioral portfolio theory for mean-variance portfolio theory and behavioral asset pricing model for the CAPM and other models where expected returns are determined only by risk. Behavioral finance also distinguishes rational markets from hard-to-beat markets in the discussion of efficient markets, a distinction that is often blurred in standard finance, and it examines why so many investors believe that it is easy to beat the market. Moreover, behavioral finance expands the domain of finance beyond portfolios, asset pricing, and market efficiency and is set to continue that expansion while adhering to the scientific rigor introduced by standard finance.

Keywords: Behavioral finance, standard finance, rationality, rational people, normal people.

A Conceptual Legal Framework of Implications and Pathways concerning Human Health Crisis and Food Safety

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Abstract

Human nutrition describes the processes whereby cellular organelles, cells, tissues, organs, systems, and the body as an entire obtain and use necessary substances obtained from foods and nutrients to take care of structural and functional integrity. The multidisciplinary nature of the science of nutrition, lying in both the natural (biological) and social scientific fields, demands that students of nutrition have a basic understanding of the many branches of science and that they should be ready to integrate different concepts from these different disciplines. While clothing and shelter have emerged as basic needs within the due course of human evolution, right from the start of life, food has been the primary source of energy and existence. Nutrition and food is one of the necessities for the sustenance of life. It's no wonder to mention that community health is national wealth. Over the centuries of human existence on planet Earth, food, clothing, and shelter have emerged because of the three necessities. The dependence on food grew manifold with the rapid rise within the global population and today, it is one among the main concerns for several of the countries, especially the developing and underdeveloped countries, to satisfy the food demand of its population.

Keywords: Nutrition, Food Safety, Legal Aspects, Health Crisis, Food Availability.

The Impact of the Development of the Tourism Industry on Economic Growth in Albania and the Impact of the Pandemic

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Abstract

Tourism is a developing sector in recent years and its impact is even greater on the economy of Albania. Investments focused on the development of the provision of quality tourism accompanied by a fascinating nature have been made in recent years not only to increase the number of tourists in the country but also to expand the map of these tourists coming. In this paper we will describe the progress of economic growth and the number of tourists in Albania. With data obtained from INSTAT, Wordbank, WTTC, a regression model with annual data on the impact of tourism on GDP will be evaluated, in order to assess the weight of the tourism sector in economic growth. Autoregressive models have been used to model the relationship between variables.

Keywords: tourism, growth rate, Koyck.

Introduction

Albania is located in the heart of the Mediterranean and lies along the Adriatic and Ionian coastline. It is bordered by land borders with Greece, Macedonia, Montenegro and is connected with Italy via the Adriatic Sea. Albania with its beauties offers an attractive coastline and high potential for development, with long white sand beaches and clear water;

Albania has a typical Mediterranean climate with mild, wet winters and warm, sunny summers, up to 300 light days a year. With great climatic conditions Albania is a "destination all year round"

Tourism has also become more diverse over the last few years and is now seen to consist of three main product areas:

- Coastal tourism, where it has been developed as the main product that focuses on "beach and sun" tourism. The main coastal destinations are Velipoja, Shengjini, Durrës (Adriatic Sea), Vlora, Himara, Saranda, Ksamili (Ionian Sea). The product "beach and sun" in some regions of Albania, offers advantages in the natural environment, accommodation facilities, kitchen services and special services.
- Cultural tourism, although not the main focus, Albania's resources and history in archeology, heritage and culture, offer considerable potential. This area has been identified as the main points of Albania by various visitor observations and travel trade from foreign markets. Albania offers three World Heritage sites: Butrinti Archaeological Park, UNESCO Berat and Gjirokastra areas, followed by a number of historical and cultural attractions and monuments.
- Natural-rural-ecotourism, climate of Albania, geography and physical diversity of the territory, represented by a series of mountains, lakes, rivers and lagoons is associated with rich biodiversity of flora and fauna. These are present in a number of national parks and nature reserves within the country. Natural and rural areas in Albania offer opportunities for the development of rural tourism, ecotourism and nature-based activities (river rafting, paragliding, mountain biking, fishing, trekking, climbing, hiking, horseback riding, study trips, etc.). Some of these activities are the main motivation for foreign visitors to visit these countries.

Tourism in Albania is an economically influential sector that aims to meet the demands of Albanian citizens and foreign tourists for cultural visits, leisure, health and sports, accommodation, food and entertainment, etc., by positively changing the economic structure, creating new jobs and substantial income, as well as contributing to the social and economic development of the country.

The total number of foreign visitors has increased significantly in recent years, but suffered a major increase in the pandemic years, especially in the summer of 2020.

The economy recovered rapidly in 2021, following a 4% decline in the pandemic year 2020, which was the strongest since the pyramid crisis of '97. Pre-crisis levels were reached in the first quarter of 2021, according to data from INSTAT. The growth rate is expected to be different, depending on the specific sectors and factors that may affect positively, or negatively. Trade and services are expected to be key sectors that will drive growth. Tourism is expected to be positive this year. Rahman Kasa, from the Albanian Tourist Union, says contracts

have been concluded with Poles, Czechs, Ukrainians, Russians, Israelis and Nordics. German and Swiss tourists are also expected to return to higher numbers.

In 2019, the contribution of travel and tourism to GDP (% of GDP) for Albania was 27%. Although Albania's contribution of travel and tourism to GDP (% of GDP) fluctuated significantly in recent years, it tended to increase during the period 2000 - 2019 ending at 27% in 2019.

Literature review

Advances in empirical inquiry into the relationship between tourism and economic growth have been greatly facilitated by developments in econometric techniques. The empirical literature on tourism and economic growth is divided into two major groups, focusing on a single country or a region or beyond.

There are several studies on the impact of tourism on the economic development of Albania, thus (Lazimi.L, 2021) based on a survey conducted between August and early September 2020 on the perceived impact of COVID-19 on the tourism sector in Albania with Representatives of hotels and accommodation units in Albania presents their views on the impact of COVID-19 in the sector. This paper focuses on creating several scenarios from the perception of the impact of COVID-19.

The purpose of the study (Kruja.A, 2012) is to examine the impact of the development of the tourism sector on the country's economy. Sustainable tourism development should be evidenced under the control of the government and all actors by linking the three main components: social, environmental and economic aspects, working together.

The aim is to develop a profile of Albania hotels based on a critical attitude analysis of foreign tourists visiting the country. COVID-19 negatively affected the Albanian tourism sector because 2,657,818 foreign nationals visited Albania in 2020, which is 41.49% less than in 2019.

Schiopoiu (Burlea-Schiopoiu, A.; Ozuni, F, 2021), uses a quantitative analysis and a regression model to investigate the potential of Albanian tourists. The results demonstrate that the tourist is a rational decision maker and the findings show that there are differences in expectations and perceptions among respondents. These differences are not significantly related to the gender of the respondents, but related to the level of education, the differences are important for sensitivity, where respondents with a college degree have a higher level of expectations than respondents with higher education. The findings highlight the practical implications of the search for hotel managers because they need to keep in mind that tourists are very sensitive to the level of understanding of their specific needs by hotel staff.

The study conducted by Jonel (Kristo.J, 2009), will present an econometric model which confirms the dependence of GDP on tourism revenues and the real effective exchange rate of. The study has proven that the development of tourism has a positive impact on economic development and this impact is significant.

According to (Sinaj.V, 2014) the development of tourism has a causal relationship according to Granger with the increase of employment and this in turn will lead to the economic growth of the country and Johansen cointegration shows a stable relationship even in the long run period.

According to (Malaj.V, 2020) a gravity-type equation is built based on an annual database of international tourist arrivals in Albania from 22 countries of origin during the period 2001–2018.

The gravity model was evaluated through three evaluation techniques, pooled OLS, fixed effects and random effects. Empirical results showed that international tourist arrivals in Albania are positively correlated with GDP per capita in the destination and in the countries of origin, total investments in infrastructure, political stability and the absence of violence / terrorism, and the existence of common borders. On the other hand, the dependent variable is negatively related to the distance between Albania and the countries of origin, and to the 'dummy variable climate of similarity.

According to (Shahini. L & Haderi. S, 2013) the time series of GDP with quarterly frequencies and in its logarithmic form the models as an ARIMA Model (1,0,1) and this model is used for forecasting, and why it is not the model with best performance.

Careful forecasting of tourist arrivals is a key factor in arranging and administering tourist activities.

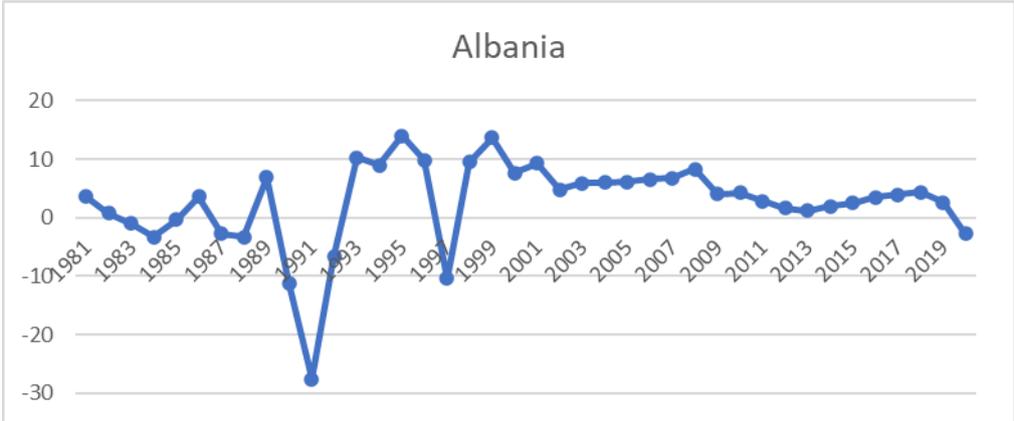
Empirical analysis

Growth rate in Albania

Post-communist Albania has experienced a relatively high GNP growth rate. She grew up quickly from 1993 to 1995. The data show that in 1995 Albania experienced the highest rate

of the increase in real GNP of the post-communist period. The growth rate during 1995 was higher than 13%. After 1995 the country's economic growth rate fell sharply due to the situation of unstable policies resulting from the collapse of pyramid schemes. It reached the most small value of -10.2% during 1997. The trend reversed during 1998 when the country's real GNP increased by 12.7%. The growth rate had a downward trend from 1999 to 2002 but remained positive. She grew upslowly from 2003 to 2008 and then fell again during 2009-2011 probably due to of the negative impact of the global economic crisis that began in 2007. Based on data from the World Bank it is on average 5.42% for the period 1992-2011. However, the real GNP growth rate in Albania has not been very stable. Economic growth in Albania for the period 2019-20 has been negatively affected by the shocks suffered by the November 26 earthquake and the COVID-19 pandemic. GDP trend for capita growth (annual%) with data from the World Bank (Bank, 2021) for the years 1981-2020 are presented in the chart below

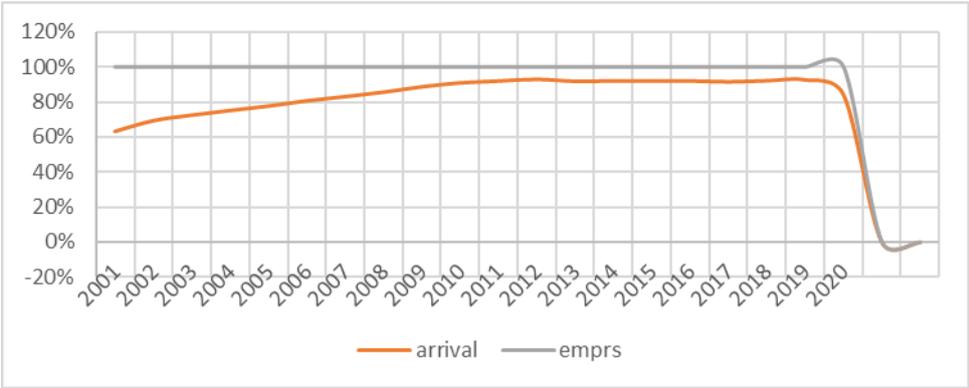
Figure 1 GDP for capital growth (annual %) Albania



Source: World bank(2022) and Author calculation

Tourism development affects the economy with the help of a number of other variables. Thus, the development of this sector requires even more manpower and consequently the impact on reducing unemployment is significant, although in Albania there has been informality. The following graph shows the development of the tourism sector and employment in this sector, the number of tourists arrived in Albania and the number of employees in the same period.

Figure 2. Rate of number of touris arrival and employment.



Source: INSTAT(2022) and Author calculation

In 2020 we can see the decrease in the number of tourists and employment in this sector have experienced a great increase in the period of pandemics in 2019 and 2020, although in these times due to the measures of different countries Albanians do not move abroad for holidays. . The economy has been hit hard by the pandemic, but we must not forget the earthquake that hit the country in November. The year 2021 seems to be more optimistic for the economy to return to normal and the tourism industry to have a proper development.

Relationship economic growth - tourism

Tourism is a priority sector of sustainable economic and social development for the Albanian economy. It generates higher income in a number of related economic activities, as well as guarantees employment and self-employment opportunities in the country. With special natural and historical riches and a wealth of cultural heritage, Albania has an extraordinary tourist potential, which will create a more recognizable identity for Albanian tourism, will improve the competition and improve the position of Albania in the national tourism market, regional, European and global.

According to data from the Ministry of Tourism and Environment, it is projected that the increase of direct and indirect contribution of tourism to the Gross Domestic Product will go from 26% in 2016, to the level of 29% in 2022, maintaining an average annual growth for period 2018 -2022 at levels of 6.1% per year. "The indirect contribution of this sector is estimated to be in the ratio of 1 to 2.5 compared to the direct contribution, reinforcing the importance it has in the economic development of the country. The increase of employment from the level of 85 thousand employees directly in the tourism sector or 7.7% of the total number of employees in 2016, aims to reach 100 thousand new jobs or 8.5% of the total number of employees by 2022

In 1995, tourism revenues reached \$ 70.00 million, or about 2.9% of gross national product. This corresponded to about 304,000 tourists at the time and approximately \$ 230 per person. Within 24 years, the country's dependence on tourism has increased drastically. In 2019 revenues reach \$ 2.46 billion, accounting for 16.08% of gross national product. Each visitor in 2019 spends on average \$ 384 for his vacation in Albania.

Empirical modeling of economic growth and tourism

To model the relationship between the two variables we will use the time lag model.

A time delay model is a time series data model in which the regression equation is used to explain the present values of the dependent variables, based on both the present values and the delayed values of the explanatory variables. One such model is presented below:

$$Y_t = \beta_0 + \beta_1 X_t + \beta_2 X_{t-1} + \beta_3 X_{t-2} + u_t$$

where

Y_t is GNP

X_t is the natural logarithm of the number of tourists in Albania.

u_t are the remnants of the model.

The coefficient β_0 is the coefficient or short-term impact

And the sum of the coefficients is the impact in the long run.

To evaluate the time delay model we used dynamic OLS and the estimates for finding the appropriate delay were performed in R software and the Ad Hoc method and the Koyk method were used.

Using the selection criteria of lag we found suitable lag.

The AIC, BIC and HQC are used as statistics of good fit, and we use them for the selection of the most appropriate-best fit model from a sum of estimated ones. The mathematical formula for these statistics are shown in the equation below:

$$AIC(M) = -2 \log L(M) + 2 \cdot p(M)$$

$L(M)$ is the likelihood function of the parameters in model M evaluated at the MLE (Maximum Likelihood Estimators) and $p(M)$ is the number of estimated parameters in the candidate model.

Schwarz's Bayesian Information Criterion

$$BIC(M) = -2 \log L(M) + p(M) \cdot \log n$$

Hannan-Quinn information criterion

$$HQ(M) = -2 \log L(M) + 2 p(M) \log(\log n)$$

As a user of these information criteria as a model selection guide, you select the model with the smallest information criterion. We should note, however, that the criteria depend on the unit of measurement of the dependent variable.

The following table shows the value of the criteria and the values of R-squared.

Table 1 The results of selection test

Lag of model	AIC	BIC	R-squared	Adjusted R-squared
2	-0.2815603	5.608709	0.8475	0.8246

3	5.762365	1.050601	0.8718	0.8433
4	-6.795088	0.8422088	0.8747	0.8456

Based on information the most suitable for modeling the growth depending on the number of lag is 4.

The selected model is:

$$Y_t = 4.52 + 9.185 x_{t-1} - 1.98 x_{t-2} - 0.145 x_{t-3} + 3.62 x_{t-4} + 3.052 x_{t-5}$$

In the short run, the impact of increasing the number of tourists by 1% leads to an increase in the contribution of this sector by 9 percentage points and 49% of the reflection is done in the first period, 10% in the second period and 16 in the last period.

For the evaluation of models with time delays can also be used the evaluation of parameters according to Koyck.

Koyck's assessment applies the relation:

$$\beta_k = \beta_0 \lambda^k$$

where λ is in the range $0 < \lambda < 1$. It is otherwise called the rate of decline or destruction of the model with time delays and $1 - \lambda$ is called the speed of adjustment (adjustment).

Where do we get:

$$median = -\frac{\log 2}{\log \lambda} \text{ and } mean = \frac{\lambda}{1 - \lambda}$$

The Koyck model evaluated for our data is:

Table 2. The result of Koyck model.

"Y ~ (Intercept) + Y.1 + X.t"			
Coefficients:			
(Intercept)	Y.1	X.t	
0.9867	0.8002	2.2111	
\$geometric.coefficients			
	alpha	beta	phi
Geometric coefficients: 4.937468 2.211104 0.8001525			

Based on the Koyck model we have that the median time is 3 periods and the average time is 4 periods.

Conclusions

Tourism is a sector with many prospects to contribute to the economic growth of a country. It affects economic growth in several ways, increasing employment, increasing consumption and reviving public and private investments, Albania as a country with a convenient geographical position and a suitable climate is attractive to tourists. In Albania, investments in this sector are even more visible every year. Tourism has had strong positive trends in recent years except for the Covid 19 pandemic period which reduced the number of tourists and the contribution of this sector to very, very low levels. The GDP contribution model of the tourism sector is significant with an impact of 49% in the first period and 16% in the fourth period. The appropriate model is the model with 4 time delays, According to koyk the median time is 3 periods and the average time is 4 periods. This shows that tourism is not only an important variable in economic development in the short term, but it has an impact in the long term.

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Handicrafts as a Factor of Local Development: Bibliometric Analysis

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Abstract

The role of handicrafts on a global level has a renewed importance at the present time, both for developing countries and for rural development, in general. Governments are increasingly trying to promote rural development and fight against the flight of the population from rural areas, finding in handicrafts an important tool for local economic development and employment promotion. In this study is analyzed the advances in research in the field of crafts and their influence on the development of rural communities, as well as the main lines of research that are currently being addressed, as well as future trends, through a bibliometric analysis. This analysis has provided a global, systematic and visual overview of the 1,379 studies related to the role of crafts in the development of rural areas, since 1954, the year in which the first publication, until 2021. Trends have been identified growth in the number of articles published, journals, authors, institutions and countries. The results have shown the growing interest of the scientific community in this area of study; which began decades ago with lines of research that studied the economic development of countries, and has evolved to focus less on economic aspects and more on aspects of the rural world and sustainable development, a key factor for the future of society. Specifically, it has been observed that the most popular lines of research on this subject have been those in which handicrafts are considered a source of income for local communities, especially linked to tourism, employment promotion and sustainability; those that study the demographic and economic effects of new craft products and processes on rural areas; and those that consider it as a factor to mitigate poverty in the rural world. Therefore, it fundamentally highlights the concept of handicrafts as a source of subsistence for poor rural regions.

Algebraic Knowledge Transformations to Problem-solving of Contextual Chemistry Problems

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Abstract

Algebraic knowledge transfer is considered an important skill in problem-solving. Using algebraic knowledge transfer, students can connect concepts using common procedural similarities. This quasi-experimental study investigates the influence of algebraic knowledge in solving problems with chemistry context by using analogical transformations. The impact of structured steps that students need to take during the process of solving stoichiometric problems was explicitly analyzed. A total of 108 eighth-grade students participated in the study. From the overall number of students, half of them were included in the experimental classes, whereas the other half were part of the control classes. Before and after the intervention, contextual problems were administered twice to all the student participants.

The study results indicate that the students of the experimental classes exposed to structured steps in solving algebraic problems and the procedural transformations scored better results in solving problems in mathematics chemistry compared to their peers who did not receive such instruction. Nevertheless, the results indicate a greater likelihood that students benefit from the intervention in solving problems in mathematics. In chemistry, an increase in students' scores in the post-test is observed. However, the difference between the averages of the pre-test and post-test is insignificant.

Keywords: algebraic knowledge, analogical transformations, mathematics, problem-solving, contextual chemistry problems.

Effects on Internships and Volunteerism in the United States – Community Outreach in Times of a Global Pandemic

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Abstract

Community outreach has an extremely positive influence on a human being's life and helps to shape young minds into more productive members of society. Whether involved in internships for college credit or volunteerism within the local area, exposing students to different ways and means in which other people live and work will not only open students' eyes, but also open many doors to unlimited opportunities for future growth within the students' field of interest. Implementing community service into the collegiate academic curriculum enhances the educational background and better prepares the graduating undergraduates for the outside 'real' world. With an uncontrollable environment such as a Pandemic, how have prospects for college students been affected and to what extent are trainee experiences being compromised?

Keywords: Community Outreach, Service-Learning, Engagement, Internship, Volunteerism.

INTRODUCTION

Aristotle (born: 384 BC) once said, "the essence of life is to serve others and do good." (VolunteerHub, 2020) "Volunteering and performing community service provides essential help to underserved and struggling communities, but it can also provide benefits to the volunteers as well." (Friendship Circle, 2021) It is a valuable way for students to reinforce communication, time-management, and problem-solving skills while being introduced to different organizations.

Getting started with volunteering at an early age is a great way to help others, meet new people, and learn dependability. (Friendship Circle, 2021) In a high school survey of 64 percent female and 36 percent males, 71.3 percent of students shared their feelings stating community service has helped them to become more positive members of society. Other students stated it made them appreciate everything they have and to be grateful for what their families provide; while others are more aware of people who are different and/or less fortunate. Such change-making experiences allow students to be more empathic, better to interact, and able to be more considerate of others.

Community service affords teens the opportunity to develop leadership skills and become more patient with consumers, leading to a greater sense of accomplishment... which will be a well-needed asset at the university level. In 2014, thirty-nine percent (39%) of 12th-grade students reported that they volunteered at least once per month according to findings from Child Trends. (VolunteerHub, 2020)

A big factor influencing a teen's decision to volunteer is when another family member volunteers as well. A youth with at least one parent that volunteers is twice as likely to volunteer while a youth that has both parents volunteer are nearly three times more likely to volunteer on a regular basis. Married persons volunteered at a

higher rate (29.9 percent) in 2015 than those who had never married (19.9 percent) ... and parents with children under age 18 years old were again more likely to volunteer than persons without children, 31.3 percent versus 22.6 percent. In 2015, teenagers (16 -19 years old) continued to have a relatively high volunteer rate, at 26.4 percent. (U.S. Bureau of Labor Statistics, 2015)

Children watch everything their parents do and try to emulate them. “By giving back to the community, [parents] show them firsthand how volunteering makes a difference and how good it feels to help others and enact change.” Of those who volunteer at nonprofits, eighty-five percent (85%) donate to the nonprofits for which they worked. (Giving Report, 2020)

Volunteering is a personally rewarding activity for the entire family. On average, 25.1 percent of the adult population spend an average of 52 hours per year in 2017 volunteering their time, talents, and energy to making a difference, contributing an estimated 8.8 billion hours (NCCS, 2020) and a value of [over \\$184 billion dollars](#). (VolunteerHub, 2020)

INTERNSHIPS

An internship is a temporary job position is typically reserved for college students and recent graduates to work in exchange for school credit or for base pay and is now required by many collegiate business programs to challenge both the willingness and the abilities of young adults while pursuing their field of interest. Such opportunities enable undergraduates to experience the likes and dislikes of daily work operations, culture, and routines of on-the-job training. While these interactions within the respective field serve as indicators to guide students towards their ultimate career goals, “internships are also helpful for students who haven’t settled on a career path. According to Indeed, by working in an industry temporarily (from several months to a year), students can take some time to determine whether a career is right for them” (2021).

Internships have become an integral part of job preparation for college students and graduates, offering real-life experience in the workplace to complement years of classroom studies and to provide a chance to develop networks. So, for the many students who spent untold hours researching, applying to, and landing an internship to beef up their resumes, the loss of this opportunity is a serious blow. (Mizrahi, 2021)

During 2020, a global pandemic known as COVID-19, entered our lives in unprecedented ways causing the restructuring of well-established internship programs. These beneficial experience(s) for people newly entering the professional world, seeking a career change, or wishing to gain industry experience (Indeed, 2021) have evolved since their initial formation due to mandated rules and regulations.

The Pandemic challenged students to engage with community businesses in new and effective ways through remote (at home) shelter-in-place technologies. This new coronavirus disrupted many regular routines and future plans globally, making previous ways of outreach no longer options. Many small businesses needed to close their doors, eliminating internship opportunities for college students. (VolunteerHub, 2020) Another option created because of these unique events, was for internship positions to ‘go remote’. As “employers are still eager to connect with students and build a pipeline of talent for their future workforce” (UMass, 2021), this initiative allowed the opportunity for students to work independently for any company in the world and still build practical skills.

While internships worldwide are being affected by the immediate rules for social distancing restrictions as a top priority, planned internships looked at new innovative means of executing their programs. Job preparation in the workplace has become an integral and important true-to-life experience to complement years of classroom studies. According to Cengage, “micro-internships provide an alternative hands-on experience through a defined project... and are paid, short-term assignments that range from 5-40 hours to complete.” (2021)

In mid-March, clicks on internship opportunities (one way to gauge applicant interest on Indeed) were 21 percent lower than the same time last year. (Indeed, 2021) In this new environment, students found this option extremely challenging, especially in the summer of the coronavirus outbreak. Students who secured an internship worked with their advisors and/or supervisors about the feasibility of continuing the position in some alternate fashion. Some companies may have projects for interns to work on such as conducting data analyses, literature reviews, survey creation, or data input that would be feasible for online execution. Likewise, companies may need interns to develop social media to connect with clients and keep branding fresh which could also be accomplished remotely.

Prior to COVID-19, the status quo for college internships at Salve Regina University in Newport, Rhode Island had been primarily in-person as demonstrated at the beginning of Spring 2020 when ninety-seven percent (97%) of the students intended to complete an in-person experience. During the Spring 2020 semester, sixty-one (61) students were enrolled in the Professional Internship for Business (MGT491) course with only two (2) students working at virtual internships and fifty-nine students (59) working in-person at businesses, non-profits, or government agencies. In March when COVID-19 shut down businesses and sent workers home to work remotely, employers and students had to immediately readjust. Twenty-four (24) students changed from working in-person to virtual operations, while thirty-five (35) were able to complete their internships in-person under extremely modified circumstances.

The 2020-2021 academic year was an exceptionally challenging year to find internships for the over 150 Salve Regina University Business and Economics majors. With COVID-19 restrictions in place, the doors were open to numerous remote and semi-remote learning opportunities across the nation totaling well over 18,000 hours of experiential learning.

Optimistically starting Fall 2020, Salve Regina University held split classes on Campus with thirty-eight (38) business and economics students gainfully employed at internships. Historically, virtual internships were for distance learners, but during these unparalleled times numerous local internships became virtual and the uncommon hybrid (combining virtual and in-person/onsite work) format emerged as the popular option. With COVID-19 restrictions strictly in place, twenty-three (23) students were at internships in person, thirteen (13) students were at virtual internships, and only three (3) students followed a hybrid format of internships.

With an increased number of successfully completed virtual internships worldwide, Salve Regina University Business and Economics students shadowed the trend. In Spring 2021, there was a substantial increase in the number of students who completed internships that semester at eighty-three (83): forty-six (46) students who completed their requirement in person, twenty-two (22) virtual internships, and fifteen (15) hybrid internships in total.

VOLUNTEERING

Started in 1736 by Benjamin Franklin with the first volunteer-run firehouse worldwide called the Union Fire Company, volunteerism has been a positive strengthening skill to enhance the body, improving mood, and lessening stress in participants. (VolunteerHub, 2020) Volunteering has been known to increase self-confidence, self-esteem, and provide purpose to one's life. Additionally, volunteering has many unknown health benefits such as helping to reduce the risk of depression and social isolation. Volunteering helps people stay physically healthy and "is good for [people's] health at any age, but it's especially beneficial in older adults." Studies indicate people who volunteer have shown to have reduced symptoms of chronic pain or heart disease have a lower mortality rate than those who do not volunteer.

Understanding the functions and trends in volunteerism provides a clear idea of the motivation, values, and needs to improve management processes and are essential to help achieve corporate mission and goals. (Initlive, 2020) Volunteers are the workforce that keeps small community charities to large non-governmental organizations and international nonprofits running. Sixty percent (60%) of hiring managers see the act of volunteerism as a valuable asset when making recruitment decisions according to a study performed by Career Builder. (VolunteerHub, 2020)

Most college-bound students are aware of the importance of volunteer service activities in both profit and non-profit industries as a key component to their application. Therefore, it is never too early to begin to make a difference and to serve your local citizens. Each year people under the age of 24 years old account for about twenty-three percent (23%) of all volunteers of which four percent (4%) are college graduates. In 2015, food preparation and distribution were the most reported volunteer activity representing approximately eleven percent (11%) of volunteers. (VolunteerHub, 2020)

Personal support teams protect all from stress and depression during challenging times such as a Pandemic. Whether using negative terms such as masks mandates, lockdowns, quarantines, or more positive terms such as togetherness, opportunities, volunteering (Keating, 2021); virtual volunteerism may be the most successful option. "There are so many organizations that need your voice at the table, as well as your perspective, your wisdom and your intellect," says Alicia Wilson, vice president for economic development at The Johns Hopkins University and the Johns Hopkins Health System. "Right now, many organizations would welcome you and your

connections. If you don't have the time to get in there and give your physical time, you can join a Zoom meeting and share your experience and expertise. The blessing of COVID-19 is you can sit on Zoom and give tremendous value to organizations that are trying to think through really, really difficult challenges.” (Keating, 2021)

Community Service

Community service has an enormous positive impact on teens on both mental and physical health by reducing stress, strengthening their immune system, and tempering emotions. Being active in community service helps young people gain access to a range of opportunities needed to mature as healthy, caring, and responsible people because “youth who participate in high-quality community-based service-learning are likely to benefit in a number of ways.” (PCI, 2018).

Many leaders in public service today speak about how they were nurtured, inspired, and shaped in early experiences in community service or volunteering” (Calvert Education, 2021). Encouraging people who are naturally shy and have difficulty meeting others should practice interpersonal skills by meeting regularly with groups of people with a shared common interest. This feeling of accomplishment as one unites with others for a cause reward all in immeasurable ways.

Helping others provides individuals with a sense of accomplishment, identity, and pride. The better a person feels the more likely one is going to have a positive view of their life and future goals. This helps people learn how to work with others side-by-side and to develop a cohesive work structure. These work ethics develop empathy and self-efficiency in students while strengthen the community. The big outcome is that teens make a difference in other people's lives as well as their own lives (Tomtotalsurf, 2018).

Individuals with higher levels of education were more likely to volunteer than were those with less education. Among persons aged 25 years old and over, 38.8 percent of college graduates with a bachelor's degree and higher - practiced volunteerism, compared with 26.5 percent of persons with some college or an associate degree, 15.6 percent of high school graduates, and 8.1 percent of those with less than a high school diploma. Among the major race and ethnicity groups, Whites continued to volunteer at a higher rate (26.4 percent) than Blacks (19.3 percent), Asians (17.9 percent), and Hispanics (15.5 percent). (U.S. Bureau of Labor Statistics, 2015)

Service Learning

Service learning increased the youth's sense of self-efficacy and teaches them they can impact real social challenges, problems, and needs. (Calvert Education, 2021) Service learning is a volunteer activity at the university level which combines both theoretical learning with practical community outreach (usually for additional academic credit attached to a course) to share knowledge with local groups while having an impact on people in their community. As members of society, students contribute as active citizens while building their character. “Community members, students, and educators everywhere are discovering that service-learning offers all its participants a chance to take part in the active education of youth while simultaneously addressing the concerns, needs, and hopes of communities.” (Service-Learning, 2021)

To reframe traditional in-person civic engagement resulting from pandemic restrictions, new and safe resources were employed. Such extraordinary events have altered the standardize ways in which college students volunteer during Covid-19. Defined by Suffolk University, these four (4) types of service learning options may need altering to allow for these daily lifestyle changes: 1) *Direct*: Interact with specific groups and perform services at an organization's location. Examples include tutoring young children and serving meals to the homeless, 2) *Indirect*: Complete tasks needed by a community organization but not on site with clients, such as assisting with a social media awareness campaign, 3) *Research*: Conduct research projects to collect, analyze, and report data that supports or informs the organization's work, 4) *Advocacy*: Develop ways to increase public awareness or provide education and training on an issue being addressed by an organization, like racial equity or the importance of voting. (Venable, 2020)

Students have shown higher academic achievements and interest in furthering their education when involved in experiential learning. According to experts, youth who focus on giving back to communities enhance their problem-solving skills, ability to plan and work in groups, and take away valuable learning experiences. These change-making events need to be encouraged and fostered by schools allowing students to participate in service-learning projects, community service acts, and volunteerism from home. The youth of today are flexible and with a little coaching can adapt and create opportunities to help others and to give-back to the community (Murphy,

2021).

CONCLUSIONS

“For the last 30 years, we believe volunteers transform communities through service and civic engagement giving 1.3 million hours towards closing the educational and economic opportunity gaps, addressing hunger & homelessness, serving health & wellness needs, supporting environmental and cultural vibrancy, and more”. (Boston Cares, 2021)

While applying their collegiate knowledge to their designated profession, students understand their discipline from a new perspective. Whether through internships, community involvements, volunteer opportunities, or service research projects; real-life office and fieldwork experiences are meaningful and indispensable necessities to becoming productive members of society while meeting their academic and career goals.

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The Exploration of Applying ICT in the Reverse Supply Chain of Expired Medicines in China

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Abstract

Expired medicines have been discussed most for the severe damage to the environment and human beings, However, little progress has been made in improving the efficiency and effectiveness of recovering expired medicines, it is still an issue pending solutions.

This paper focuses on using Information Communication Technology (ICT) to improve the efficiency and effectiveness in reverse supply chain of expired medicines. We proposed a practical solution that includes a software application-MedicineGo to break the information barriers among all parties involved in the reverse logistics of expired medicines, and a hardware-Miniature Instrument to make it more friendly and more convenient to use for people who have disadvantages in ICT. Our product will enable all on-chain modes to share real-time data, reducing circulation costs and adoption costs while increasing the authenticity and traceability of the information on the reverse supply chain of expired medicines. In particular, our product is designed to accommodate the demands of aged populations with insufficient ICT knowledge and capability. In the end, the theoretical and practical implications of our findings are discussed.

Keywords: ICT, expired medicines, reverse supply chain.

JEL code: O33.

1. Introduction

The hazard of expired medicines has been well documented and discussed in different fields. For the environment, the pollution of expired medicines will harm the surrounding water and soil, which will also threaten the living environment of human beings. Particularly in China, the issue is more serious. According to the White Paper on Recovering Expired Medicines from Chinese families (GPHL, 2018), about 78.6 percent of Chinese families have small medicine boxes, but more than 80 percent of them have no habit of cleaning them regularly; China produces about 15,000 tons of expired medicines every year, most of them are not properly disposed and handled. Moreover, 7.1% of households sold expired medicines to second-hand dealers, becoming an essential source of counterfeit medicines (Qin et al., 2013).

Even though the application of ICT has penetrated every aspect of our daily life, ICT still has blind spots in pharmaceutical care, including expired medicines (Locatelli *et al.*, 2014). We are in desperate need of a feasible solution and related technology to solve the problem of expired medicines. Especially for the elderly, who are the largest group of medicines users, also face the biggest challenge to recover expired medicines due to the lack of ICT knowledge. In this paper, we are committed to studying this problem and proposing possible solutions.

In the following parts, drawing on existing literature, we will first present our research framework. Continually, we will discuss the prototype of our product, including software view and hardware view. To put our product in a real-life setting, we also consider the application scenario, where detailed process map are demonstrated. Finally, limitations and contributions are discussed accordingly.

2. Literature Review

In recent years, the hazard of expired medicines has gradually attracted more and more attention (Sarla, 2019; Nyaga, Nyagah and Njagi, 2020). Different methods and advice for recovering expired medicines have been discussed to solve the problem (Bashatah and Wajid, 2020). However, the proposed solutions fail to provide an efficient and effective way to address the recovery and disposal of expired medicines (Ong *et al.*, 2019).

Early studies seek to raise the awareness of expired medicines, focusing on the damages and threats they can bring to the environment and the human body. Badyal (2008) found that medicines that have not been properly disposed of can have a direct negative impact on wildlife, such as diclofenac, which is one of the reasons for the decline of vulture populations in South Asia. More seriously, medicines are also found in water. Still, the wastewater treatment system cannot completely deal with the medicines in water, which will cause pollution to freshwater (Doerr-MacEwen and Haight, 2006), thus bringing a series of ecological problems. Not only for animals, if people use the water, they can also be harmed. The most critical point is that studies have shown that residual substances of expired medicines in nature need to take years, decades, or even centuries to be completely decomposed (Liu and Ding, 2009).

With the development of ICT, more studies focus on technology-enabled solutions in different countries. For example, a reverse logistics model based on radio frequency identification devices (RFID) can solve the problem of information duplication and create an efficient reverse logistics system for End of Life (EOL) medicines (Kongar *et al.*, 2015). In this model, RFID can be combined with medicine packaging. Once EOL medicines enter the coverage range of RFID readers, relevant data will be recorded in the system, which can solve the information inconsistency and complexity problems of centralized database models. The National Health Service (NHS) in the UK also uses RFID in reverse logistics (RL) systems, the director of the hospital estimates that RFID helps them to save more than £100,000 and improve the efficiency of the supply chain (Xie *et al.*, 2016).

The integration of supply chain and ICT in China is just getting started. As Gong Genghui (2020) indicates, China's logistics industry lacks top-level design, leading to the application of ICT technology in the logistics industry mainly concentrated at the enterprise level and rarely involving the government level and individual level.

In addition, building a reverse supply chain for expired medicines in China can be more complicated than in other countries, considering the complexity of the medicine supply network, the large number of participating parties, the financial cost, the degree of information sharing among all parties, lack of regulatory systems or policies, and insufficient users' awareness (Ding and Hou, 2013; Cao and Lin, 2019). In particular, Ding and Hou (2013) compared the case of China and the United States, reporting that the problems are the poorly developed information system for medicine recovery in China, the lack of fluidity between upstream and downstream information flow, and the difficulty in covering the whole country with a network regulatory system.

Another critical issue in the expired medicines recovery process is the low participation of the elderly group, a massive population with high demand for medicines (Liu, Cai and Li, 2011). Even though the application of ICT in China is promising in general (Liu and Halonen, 2018), the elderly is still vulnerable and disadvantaged with the technology. Seeing this, Liu and Halonen (2018) appealed for more research in this field to balance the situation and empower the elderly group.

3. Framework

In order to address the literature gap and improve the efficiency of the reverse supply chain of expired medicines in China, we propose a practical solution combining software application with hardware apparatus. The software

application we designed is called MedicineGo; it aims to build a platform in the smartphone that connects all parties involved in the reverse supply chain of expired medicines, including users, logistics, pharmacy stores, the National Medical Products Administration (NMPA), and Destruction Administration that disposes the expired medicines. This platform can also construct a complete chain of information for recovering expired medicine across the entire supply chain. MedicineGo, in this process, acts as a bridge to connect the information from all parties in all processes, starting from collecting expired medicines, and shipping the medicines to the final disposal of the medicines; all these activities will form a closed loop. Given the seamless communication enabled by the software application, information barriers between different parties will be broken down; all on-chain nodes are capable of sharing real-time data at a lower cost and in a more efficient way. Consequently, we can trace back every step of the process with accurate and authenticated information to demonstrate a transparent reverse supply chain of expired medicines.

In addition to the application MedicineGo, we also designed a tangible tool – Miniature Instrument, to facilitate the use of MedicineGo for the elderly group. The aged populations are the primary users of different medicines as well, but most of them are unaware of the threat of expired medicines. They face great challenges when it comes to the new technology; comparatively, they need the most help to handle expired medicines appropriately. In light of that, we propose a Miniature Instrument that will enable broadcasting, voice control, and touch-button functions for the elderly. For example, it can remind them when the medicines get expired or help them to make an order to pick up the medicine for recovery using a voice control command.

Specifically, the detailed value-generating activities of our proposal can be divided into three categories organized by the following sequence.

3.1 Distributed Collection Process:

Firstly, to optimize the operation process, MedicineGo acquires expired medicines from all individual users respectively. MedicineGo offers a door-to-door approach to collect expired medicines from the distributed users, which means they can reserve a pick-up online and hand these medicines to the courier at the appointed time. When the courier confirms that the medicine received corresponds to the order information, the medicines pick-up order has been completed successfully. At the same time, the order information will be updated in the database; the MedicineGo app will automatically convert the recovered expired medicine into corresponding reward points, which will be accumulated and recorded in the users' accounts. By obtaining the reward points, users can choose to use credits to pay for the medicine when they purchase it in a cooperative pharmacy store online.

In the process of the distributed collection process, the reward points are used to improve users' willingness to participate in recovering expired medicines, which promotes the medicines recovery at the source, and it's the key to establishing an effective long-term mechanism.

3.2 Centralized Aggregation Process

With the help of the Medicine Go app, users can make orders. The order information will be uploaded into our database and sent to the third-party logistics company. We cooperated with a local logistic company to pick up the expired medicines.

After picking up these expired medicines, couriers will transport these medicines to the warehouse nearby, where these expired medicines will be stored and aggregated. When the expired medicines accumulate to certain level, the warehouse will make an order for pick-up. The courier will pick up and transport the collected medicines to the Destruction Administration for disposal.

3.3 Specialized Handling and Processing

Destruction Administration is a third-party organization that cooperates with the NMPA and has the license to handle and process expired medicine professionally. The expired medicines collected will be transported regularly to the Destruction Administration from our warehouse for appropriate disposal and handling.

4. Product Prototype

4.1 Software

Since different parties, including users, pharmacy stores, and Destruction Administration, will be using MedicineGo, we designed different interfaces and data access authorization; the details are suggested.

4.1.1 Users Interface

When users log in the APP(see Figure 1 and Figure 2), they mainly interact with three functions:

Scan: Users can scan the barcode on the medicine package; then, the production, expiration date, usage, and other information can be displayed in the middle of the interface. If the medicine is expired, it will be present in a prominent way -- a red label next to its name. Meanwhile, expired medicines will be automatically put on the recovery list, serving as a reminder.

Make orders: Users can choose one or many expired medicines from the recovery list and place pick-up orders by filling in specific information like address, appointment time, phone number, etc.; later, the courier will come at the appointed time.

Mini-game: Unlike traditional business games, this mini-game allows users to gain medical knowledge by planting herbs. After each growth cycle of medicinal materials, game points will be provided to users, which can be converted into reward points in cooperative pharmacies for medicine purchases. In the future, online and offline interactive game models will be launched.

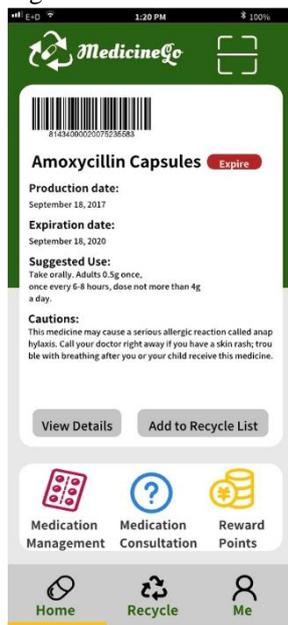


Figure 1 User Interface



Figure 2 User Interface-Mini-Game

4.1.2 Pharmacy Interface

When pharmacy stores log in the APP (see Figure 3), they mainly interact with one function:

Upload inventory: The pharmacy workers can upload the redeemable medicine information to the database and display it in the APP, and users can get the latest medicine information in real-time, including the medicines' quantities, prices, and required reward points.

4.1.3 Destruction Administration Interface

When Destruction Administration log in the APP (see Figure 4), they mainly interact with one function:

Check destruction order: The Destruction Administration can check the medicine order information and confirm the medicine obtained. Update the medicine destruction information after the destruction procedure.



4.1.4 National Medical Products Administration Interface

When NMPA log in to the APP, they mainly interact with one function :

Track the whereabouts of medicines: NMPA can check the whereabouts of medicine on the interface and check and proofread them in real-time. If there are suspicious or error messages, relevant parties can be notified or warned in time.

4.2 Hardware

The elderly are one of the largest groups of medicine users in the China (Liu, Cai and Li, 2011). However, it is also the most challenging target group to reach in recovering expired medicine due to limited IT knowledge and capability. To take care of the elderly and those who are inconvenient to use mobile phones, we designed a Miniature Instrument to facilitate and simplify the operation process.

4.2.1 Structure:

The main body of the Miniature Instrument is composed of a bar code reader, a voice broadcaster, an information transmission system, and a GPS positioning system(see Figures 5 and 6).

The barcode reader can scan the barcode on the medicine package, obtain the medical information through the barcode reading system; the voice broadcast system can broadcast the primary information of the medicines in a human-like voice; at the same time, the information transmission system will convert the scanned expired medicine into a specific signal and transmit it to the MedicineGo information cloud.

When the elderly buy the Miniature Instrument, they only need to fill in their name, telephone number, and home address (one or more). Their information will create the same account as the software users in the cloud, which is used to make recovery orders.

Using the GPS positioning system to obtain the specific address of the user, and based on other detailed information, the medicines collection order can be automatically created once confirmed by the user; later, the medicine will be collected by the courier.



Figure 5 Conceptual Miniature Instrument

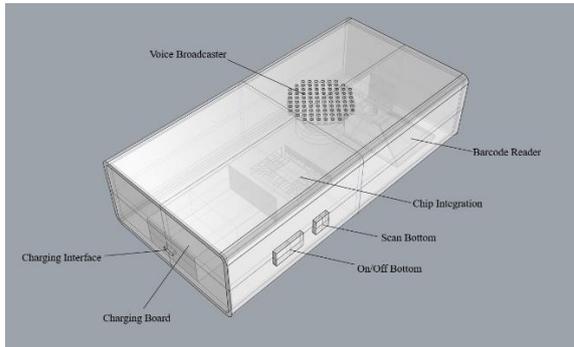


Figure 6 Conceptual Miniature Instrument

5. Application scenario

In a specific application scenario, the software and hardware we proposed can be presented in a more holistic view(see Figure 7).

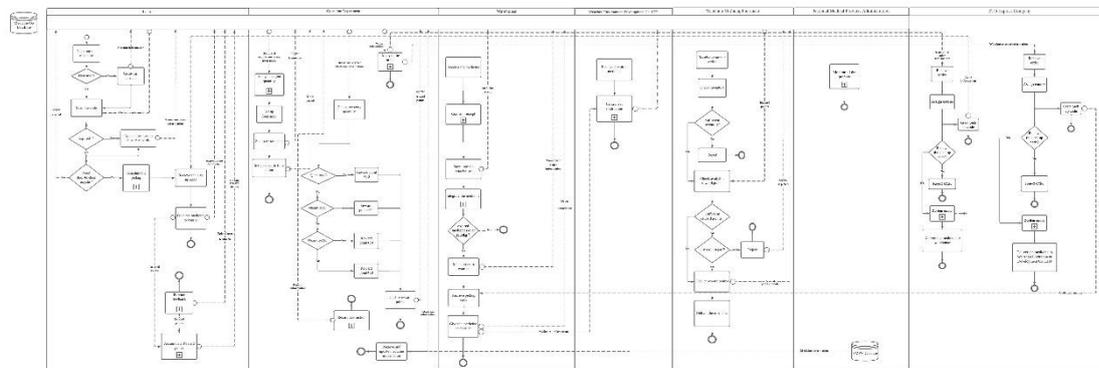


Figure 7 Business Process Modeling Notation(BPMN) based on Wenzhou

5.1 Software

Assuming Mr. Wang is a user of the MedicineGo APP. One day, Mr. Wang feels stomachache, so he opens MedicineGo and scans the barcode for a specific medicine. Then the interface shows that the medicine is expired and reminds Mr. Wang to place an order for the medicine for recovery, so Mr. Wang places an order online and requests a door-to-door pick-up service. After he fills in the pick-up time, address, and other specific information on the APP, it prompts that the order has been placed.

Later that week, the courier Lee comes to Mr. Wang's house to pick up the medicine. Mr. Wang provides the pick-up code sent by the platform and the medicine to courier Lee. Then the APP sends a message indicating that it has confirmed the receipt of the medicine and has updated Wang's reward points. After the medicine is sent to the warehouse by Lee, the warehouse may ship all the aggregated medicines recently to the Destruction Administration. The Destruction Administration will check the amount of the medicines and the medical information before destroying them. Once the information is confirmed, the Destruction Administration will apply different procedures to handle the expired medicines based on their features and compositions.

5.2 Hardware

Assuming Mr. Zhang is one of our users, he is 72-year-old and owns a Miniature Instrument. One day Zhang hears the voice broadcast from the Miniature Instrument, reminding him that one of the medicines he had scanned was expired, and the nearest recovery time was 3:00 pm tomorrow. After Zhang presses the Power-On (accept) button, a recovery order is automatically established for Zhang in the cloud system. The next afternoon, the courier Lee came to Mr. Zhang's door on time and picked up the medicine. After a while, Lee sent all the medicines in a certain area to the warehouse. Once the medicines sent to the warehouse have accumulated to a certain level, they will be transported to the Destruction Administration for proper disposal.

6. Discussion

This study develops and validates an integrative solution for the reverse supply chain of expired medicine in China. Our work can make significant contributions to academic research and practice.

From the perspective of academic research, our proposal may help to shape future research on the recovery of expired medicines. Other researchers may build upon our study to further explore this field, focusing on different approaches and templates that may include better leverage of ICT in the healthcare industry's supply chain.

For practical contributions, our proposal offers a cost-saving solution combined with ICT to improve the efficiency of recovering expired medicines. On the one hand, it can reduce the information barriers among all participants, which will decrease the communication cost and transaction cost; on the other hand, it provides monetary motivation to encourage more participants to engage in this process, increasing the coverage and efficiency of medical recovery.

Additionally, our research will not only improve the social welfare of medicine purchases but also increase people's awareness of recovering expired medicines. Moreover, preventing the illegal circulation of expired medicines, and the recovery of expired medicines will reduce the environmental pollution to the soil and water source.

The results of our study should also be interpreted with the following limitations in mind. First, the recovery processes of expired medicines we have proposed need more supervision and control. Second, we may face issues like the mismatch between medicines collected and the medicine in the recovery order or missing medicines during the transportation. Third, as the expired medicines go to the Destruction Administration, we cannot monitor the whole process. For the elderly, our product may not be sufficient to satisfy all their needs. In the future, we could address these issues more and design a more integrated solution to help the expired drug recovery, especially for the elderly group.

In conclusion, this research provides a cost-saving and more efficient solution to recovering expired medicines by optimizing the reverse supply chain with ICT in China, which can contribute to future study and practice in this field.

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Graph Learning Methods to Analyze and Support Industrial Resilience

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Abstract

Graphs are increasingly used to describe interactions between entities. They are based on simple formalism that nevertheless allows modelling of complex systems such as industrial ecosystems. Thus, a knowledge graph can be built from traditional economic variables, but also from new alternatives variables from open-source's data and big data. In this article, we review some graph learning methods and discusses latest advances in this field. Machine and deep graph learning method learn embeddings for nodes/edges in a graph to perform many tasks, such as link prediction, clustering, and nodes classification. Originality of this talk is the application on graph learning's methods to analyze and support industrial resilience. Indeed, by learning knowledge graphs which represents an industrial ecosystem, we could help for a more resilient and ecological production. In this survey, we discuss on many advantages of graph learning models and their limits. This review shows latest advances and leads to a discussion of prospects for future research.

Keywords: Graph learning, Knowledge graph, Industrial resilience

JEL codes: C45-Neural Networks and Related Topics; C15-Statistical Simulation Methods

1 - Introduction

Graphs, also called networks, can model various real-world relationships between entities. Many disciplines use graphs to formulate relationships between entities. For example, social networks, chemical and biological networks, computer networks, are examples that use graphs to model connections between certain pairs of objects. Technically, a graph is often defined by a set of nodes and a set of edges between pairs of nodes. A directed graph is a graph in which edges have an orientation. The degree of a node is the number of entering or leaving edges in each node. A directed graph is a graph in which the edges have an orientation.

Generally, graph encoding involves creation of an adjacency matrix whose values a_{ij} are the weights of the edges linking node i to node j . If the graph is non-oriented, adjacency matrix is symmetric. However, this structuring does not allow to store multiple data in nodes and edges. To build a knowledge graph of industrial ecosystems, we will use database graphs. In addition to storing the data freely, we will be able to query data without the need for multiple expensive joins that would be required in traditional relational databases. Thus, allow for very efficient updates, even for a very large data set. Triplestores store only one data's type. Triplet, consisting of start node, edge node and finish node. We do not need to create tables as in a relational database. Moreover, a triplestore is optimized for storing many triples and to retrieve these triples using the SPARQL query language.

Machine learning is a field of study in artificial intelligence that relies on mathematical and statistical approaches to give computers ability to "learn" from data. However, machine learning usually works with structured data (time series, images with pixels, texts, etc.). Classical machine learning methods will not work with graphs, as they can have arbitrary size, multimodal features, and complex topology.

Graphs can be embedded in a low-dimensional vector space where structural's information, attributes of nodes and edges can be preserved. These vectors are input data for graph learning methods. Vectorization methods can be various, depending on raw data typology of the graph (images, texts, etc.). These methods will be detailed in next chapters. According to nodes attributes, edges and subgraphs, graph learning tasks can be divided into three categories, respectively based on three ones.

(i) Classification of nodes will allow identification of key players in economic network. In fact, during node classification task, algorithm must determine labelling of a node by looking his embedding.

(ii) Grouping and detection of communities with similar properties. Technically, process of grouping together nodes that appear based on some similarity measure to be closer to each other. Identifying characteristics of each group is needed, this is the cluster analysis stage. For industrial resilience graph, clustering could identify stakeholder groups which may be economic and industrial sectors.

(iii) Prediction of links that do not yet exist between two nodes. Predicting a connection between two entities could be seen as a recommendation system. In a context of industrial resilience graph, link prediction can recommend partnerships between local industrial actors.

2 - Related Work

There are several studies on deep and machine learning methods on graphs. In contrast to these studies, our objective is to provide a comparison of graph learning methods, which can be applicable in economic context: in particular, knowledge extraction from graphs that model the industrial ecosystem. For our knowledge, this application is not covered by other literature's reviews.

Xia and al. compared graph learning methods with other methods which are more statistical models, such as graph signal processing, random walk, and matrix factorization. Nickel and al. also discuss these statistical models, but their use is focused on knowledge graphs and their automatic construction. Zhou and al. only offer a comparison of deep learning models for GNN graphs and their variants by mentioning several fields of application without mentioning economics. Kosasih and Brintrup present GNN, however, in the case of supply chains graph the purpose is to detect unknown potential links. In addition, they use gradient embedding to improve explainability by highlighting the input features which influence the decisions of their deep learning model. Cai and al. summarized graph embedding methods, this work allows us to preprocess our graphs for the models we will present in the following chapters.

In summary, no existing studies provide a comprehensive overview graph learning's application to the learning of economic graphs modelling an industrial ecosystem. Originality of our paper is the application of methods in a field where is a lack of literature review on the application of graph learning in this economic context. Our paper will present the most recent machine learning techniques for graph data that could be applied to this context.

3 - Methods

In this section, several methods which allow to analyze knowledge graphs of industrial ecosystems modeling will be introduced. These statistical or machine learning tools extract knowledge from graph topologies. In a first step, the most classical methods of statistical analysis of graphs will be presented. Then, this chapter will ended by presenting deep learning methods that have been recognized as the most powerful techniques for graph's analysis with complex data in nodes and edges (Zhang, Cui, and Zhu 2020).

a) Modularity

Modularity is a measure of the quality partitioning of the nodes for a graph. This principle implies many intra-community edges and a few inter-community edges. In other words, there are more connections between nodes of the same community than between nodes of different communities (Newman 2006). The modularity score compares, for a group of nodes, the number of actual edges to the number of expected edges (in an equivalent graph where the edges are randomly placed like the Erdős-Rényi model). If there are more actual edges than expected, then one could have a community. This gives a division score of a graph defined by the following formula:

$$Q = \frac{1}{2m} \sum_{i,j} (A_{ij} - P_{ij}) \delta(C_i, C_j)$$

Where A_{ij} , is the value ij of the adjacency matrix. m is the number of edges. $2m$ is the total number of half-edges. δ is the Kronecker delta: $\delta(C_i, C_j) = 1$ if i and j are in the same community C , i.e., $C_i = C_j$. Otherwise $\delta(C_i, C_j) = 0$. P_{ij} is the probability of the number of connections between i and j , under a null Erdős-Rényi model, which produces a homogeneous graph.

Thus, maximizing the modularity Q means looking for groups of nodes with an abnormally high number of connections between them.

Modularity is the fundamental basis of community extraction applicable to graphs. the Louvain method (Blondel and al. 2008) is particularly well suited to handle large volumes of data.

The first phase of the Louvain method consists in finding small communities by local optimization of modularity on each node. In a second step, the nodes of the same community are grouped into a single node. First phase is repeated on the newly obtained network. Iterations are repeated until no modularity's increase is possible.

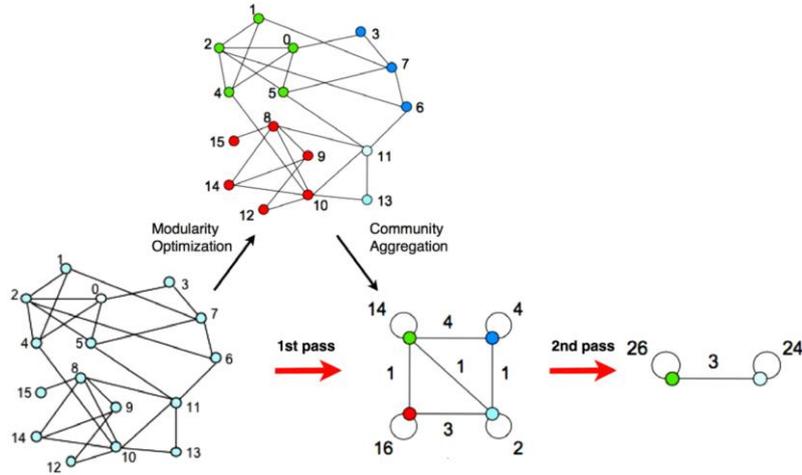


Figure 1 : Visualization of the steps of the Louvain method (Blondel and al. 2008)

Creation of these communities would make possible to identify industrial sectors. We could use knowledge graph of productive skills of Pachot and al. to group local productive partners and secure their supplies, thus promote distributed manufacturing.

b) Stochastic block model (SBM)

SBMs are generative models for random graphs. These models produce graphs containing communities, with subsets of nodes characterized by their connections to each other with edge densities. To generate a random graph, the SBM needs three parameters:

- n the number of nodes.
- A partition of the set of nodes into communities according to a multinomial distribution. $Z_i \sim \mathcal{M}(1, \alpha = (\alpha_1, \alpha_2, \dots, \alpha_K))$ where K is the number of communities and α is the probability belongs to the community.
- The probability matrix μ_{kl} where diagonal elements correspond to the probability that nodes connect internally, within the community. Other elements correspond to the probability of connection between communities (Faskowitz and al. 2018).

Graph generation with an SBM model is simple. However, estimating all parameters of the SBM model such as μ_{kl} and α is a challenge. Indeed, standard optimization algorithms, such as the expectation maximization algorithm (to obtain maximum likelihood parameters), cannot be derived. To solve this problem, variational and stochastic approximations exist, such as variational Bayesian methods (Latouche, Birmele, and Ambroise 2010) SBM methods and modularity score can create communities, but their results may be different. Indeed, modularity can illustrate communities whose nodes are strongly connected internally. On the other hand, there are few connections between nodes of different communities. The SBM identifies different clusters providing new information as hubs, which have many degrees per node. These nodes are loosely connected to each other but regularly connected to others forming star graphs. The strength of the SBM model is to provide probabilities of connections μ_{kl} between different nodes according to their cluster assignment. Probabilities of connections between groups of nodes can be considered in multiobjective recommendation systems such as those of Pachot and al.

c) Graph Neural Networks (GNN)

Deep learning tools usually work on structured data. However, graphs could have arbitrary size, multimodal features, and complex topology. Thus, Graph Neural Networks (GNN) are deep learning algorithms which induce features from graph data. These inferences may be used directly for predictions, classifications, or other approaches. (Wu and al. 2021)

To exploit graph's data, GNNs have made the hypothesis that many pieces of node's information reside in its neighborhoods. To store this data, we use "Node Embedding" which gathers the neighborhoods information with multilayer neural networks (MLPs).

Thus, a GNN uses an MLP on each node's neighbor: we call this a GNN layer. In the Figure 2, there are therefore two layers: a first layer for A neighbor's, which in turn is derived from a second layer concerning the neighbors of the neighbors. For the node information set (its embedding) we apply the MLP (grey/black blocks in the Figure 2) and get a new learned node weights vector. The same will be done for the edges when they contain information (several edge types, values, weights, etc.).

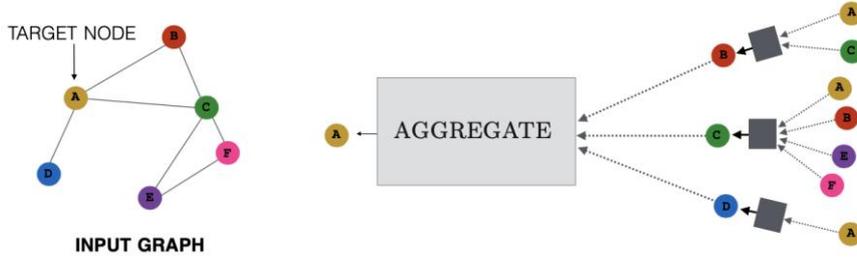


Figure 2 : GNN encoding with neighborhood aggregation methods (Hamilton, Ying, and Leskovec 2018)
The following formula indicates how the input information (from the target node h_i^t and its neighbors h_j^t) will be aggregate by neural networks and produce a new representation h_i^{t+1} . This is the mechanism found within the gray and black blocks in the Figure 2.

$$h_i^{t+1} = \sigma \left(h_i^t W + \sum_{j \in N(i)} \frac{1}{c_{ij}} h_j^t U \right)$$

- h_i^t is the initial vector containing the information of the node h_i .
- h_i^{t+1} is the updated vector containing the information of the neighbors but also graph's topology. This gives more information and a better representation of the h_i node within the graph.
- W is the matrix of weights from a neural network (MLP) that identifies most important elements to keep within the initial vector h_i^t .
- U is also a weight matrix from a neural network but will process vectors from neighboring nodes h_j^t .
- $\sum_{j \in N(i)} \frac{1}{c_{ij}}$ is an aggregation function, this sum normalizes the neighboring representations $N(i)$. This requires a function that is invariant by permutation of its variables because we must be insensitive to the order of the neighbors to have the same result, whatever the order of the neighbors.
- σ is an activation function.

Applying this function iteratively provides better representations of the nodes within their environment, i.e., in the graph. Thanks to these new embeddings, link prediction between nodes, clustering of nodes or subgraphs could be established. This method was popularized by the work of Kipf and Welling 2017.

d) Graph Attention Networks (GAT)

Like GNN, Graph Attention Networks (GAT) use data contained in these neighbors to create embeddings for each node. The difference in GATs is the use of the attention mechanism (Vaswani and al. 2017) to select the importance to be given to each neighbor.

$$\text{Attention}(Q, K, V) = \text{softmax} \left(\frac{QK^T}{\sqrt{d_k}} \right) V$$

Computation of attention coefficient is done by the above formula, where the three vectors are multiplied by the embedding of the input sequence. Here, Q is the search query, K would be the features (texts, images, etc.) associated with the best fitting results V . The attention weights are divided by the square root of the dimension of key vectors $\sqrt{d_k}$ to stabilize gradients during training, and then passed through a SoftMax function that normalizes weights to select the V values to retain. These steps are the heads of attention which have queries and keys as input. In practice, the attention function is computed on a set of queries simultaneously, grouped in a Q matrix. Keys and values are also grouped in matrices K and V (Vaswani and al. 2017).

Advantages of multi-head attention are that it provides a diversification of the results during several self-attention/attention heads (h times), as the vectors Q , K and V are randomly initialized. The chaining of these attention's heads makes learning more robust and parallelizable.

GAT aggregates information present in the neighborhood of a node by a weighted sum as an attention mechanism. First, GAT calculates an attention coefficient for each neighbor of the node in question (node features). Then, GAT must integrate edge data according to their number (centrality). Finally, if the nodes position in the graph is important, GAT will consider this position data (spatial encoding). Indeed, for our knowledge graph which models industrial ecosystems, the geographical location of the companies (nodes) must be considered. The adaptation of the GAT architecture, presented above, requires the addition of all graph's information at self-attention layer (Ying and al. 2021).

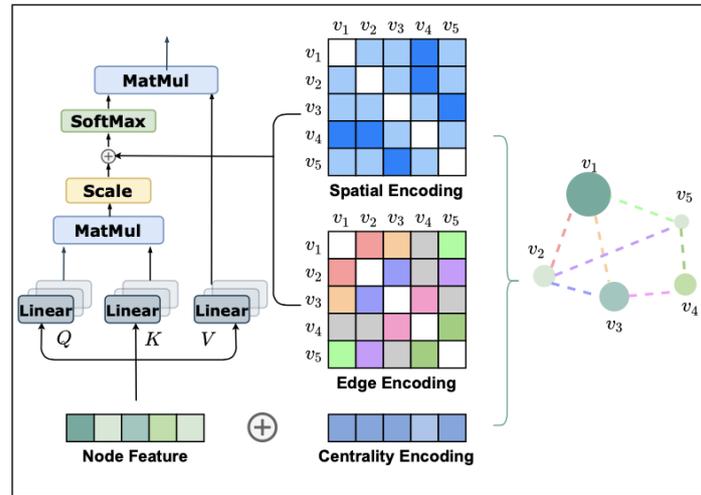


Figure 3 : Illustration of the encoding of graph information in the attention mechanism (Ying and al. 2021)

4 - Experimentations and results

There are several dataset and benchmarks used to evaluate performance of graph learning approaches for various tasks, such as link prediction and node classification. For subgraph clustering or community detection, evaluation's metrics depend on results interpretation according to study contexts. Thus, in this section, we compare the results of models for link prediction and node classification.

For link prediction, the FB15k dataset contains knowledge base relation triples and textual mentions of Freebase entity pairs. It has a total of 592,213 triplets with 14,951 entities and 1,345 relationships. FB15K-237 is a variant of the original dataset where inverse relations are removed, since it was found that many test triplets could be obtained by inverting triplets in the training set (Bordes and al. 2013). On this dataset, Wang and al. proposed a variant of GAT. Their work on a GAT based on attenuated attention shows best results in comparison with other state-of-the-art methods on FB15k-237 for link prediction.

WN18RR is a link prediction dataset contains 93,003 triples with 40,943 entities and 11 relation types. WN18RR is a link prediction dataset contains 93,003 triples with 40,943 entities and 11 relation types. It is designed to produce an intuitively usable dictionary and thesaurus. Its entities correspond to word senses, and relationships define lexical relations between them (Bordes and al. 2013). On this dataset, Li, Yi, and He proposed a variant of BERT model (Devlin and al. 2019) for link prediction. This BERT model uses attention mechanism on the textual data of the nodes and edges of this dataset to predict links. The work of Li, Yi, and He had the best state-of-the-art results on the WN18RR data. They improved by 5% over previous state-of-the-art result on the WN18RR dataset.

For node classification, the Cora dataset consists of 2708 scientific publications classified into one of seven classes. The citation network consists of 5429 links (Mccallum 2000). The best model for classification into the seven Cora classes is the model of Izadi and al. They used GNN algorithms using natural gradient information in the optimization process.

5 - Conclusion and perspectives

This paper provides an overview of graph learning and compares most recent graph learning methods. We have presented existing graph learning methods including modularity, SBM, GNN and GAT. Originality of our work is the application of graph learning methods to support industrial resilience. Indeed, by learning knowledge graphs that represent an industrial ecosystem, we could contribute to a more resilient and ecological production. Experiments and results from different benchmarks show that deep learning models (GNN and GAT) have better performances on clustering, classification, and link prediction. These results confirm our intention to use graph learning methods for our future research on knowledge graphs to model industrial ecosystems. We will work on the graph constructed with potential productive links between firms of Pachot and al. Graph learning is currently a very rapidly evolving field. We hope that this study will help researchers and practitioners in their research and development's works on graph learning and related fields.

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The Determinants of IPOs Underpricing: Evidence from the Internet Industry on Chinese Stock

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Abstract

Considering the rapid development of the Chinese Internet economy in the twenty-first century, this study empirically investigates the determinants of China's IPOs underpricing on the Internet industry by analyzing the sample of 63 listed companies in Shanghai and Shenzhen stock exchanges. The regression results show that two factors, the issuing price of IPOs and stock retained earnings rate, have a significant impact on the IPOs underpricing rate of the Internet company. The result of robustness checks suggests the same results that the issuing price of IPOs and stock retained earnings rate are two determinants mainly driven the IPOs underpricing rate of the Internet company. This study explores several underlying theories of IPOs underpricing and provides scholars with a new outlook to understand IPOs underpricing theories.

JEL Classification: G15, G20 IPOs underpricing, Determinants, the Internet industry.

Keywords: IPOs underpricing, Determinants, the Internet industry.

1. Introduction

In the late 1990s, the rapid development of the Internet industry in the United States accumulated a serious economic bubble. The collapse of the high-tech bubble dominated by the Internet industry has finally adversely affected the US Internet industry and economic development. In recent years, China's Internet industry has developed rapidly. Similarly, with large amounts of capital, China's Internet sector faces a particular risk of an economic bubble.

In recent years, the rise of China's stock market has shown a series of unique phenomena, which makes it different from western financial markets. In emerging markets, some studies point out that the initial return rate of IPOs in China is the highest in the world. In other words, China's IPO underpricing rate is the most serious in the world. According to Tian (2010), the average underpricing of IPO in China is 247%, higher than the average initial return of IPO in any country in the world. He believes that China's IPO underpricing is mainly caused by the government's regulations in IPO pricing and IPO stock supply. Mok and Hui (1998) studied 101 IPOs from 1990 to 1993 and found that the average underpricing rate of China's stock market was 462%. They believe that the country's high equity retention rate and the long-time interval between issuance and listing lead to this excessive underpricing. Su and Fleisher (1999) surveyed 308 companies from 1987 to 1995 and recorded a first-day return of 231%. They interpret this extreme underpricing as a pricing strategy that allows companies to convey their value to investors and speculate on future earnings.

At the beginning of the 21st century, under the background that China's IPO was generally underpriced, the stock value of the Chinese market, especially the stock value of Internet companies, reached an unprecedented level. Internet IPO in the Chinese market generally has a considerable underpricing range and has remained high for a long time, adversely impacting the development of China's capital market and national economy. For example, given that the subscription of new shares can obtain a very high risk-free income in China, the pursuit of risk-free returns has led to many funds entering the stock market, which has helped promote speculative internet bubbles and reduced the efficiency of capital allocation in society. As the new economy leader, the share prices of Internet companies such as Tencent, NetEase, and Ali have climbed all the way up. These substantial price surges have brought out questions about whether the traditional IPO underpricing theorems are still valid when facing the Internet IPOs and whether the influencing factors that drove the exorbitant internet IPO underpricing would foster the internet bubble to some extent.

Several studies have noticed that there are some differences in IPO underpricing between Internet companies and non-internet companies. According to Bhagat & Rangan (2004), for the influencing factors of IPO valuation of Internet companies, the value retained by insiders is higher. Still, surprisingly, the value of investment banker reputation is lower. Duchame et al. (2001) pointed out that Internet IPO underpricing mainly comes from media speculation to promote underpricing or brand promotion activities to improve consumers' awareness of Internet companies. According to Bartov et al. (2002), the differences in IPOs valuation between

the Internet and non-internet companies results from the difference in the prospectus and the final IPOs stage. Internet companies also differ in positive cash flow, sales growth, R&D, and high-risk warnings.

Given the relatively high market valuation of China's Internet economy in the early 21st century, evaluating the IPO valuation of Internet companies would be a fascinating topic. Although many studies have been done to explore the primary causes of IPO Underpricing and the unique factors of IPO underpricing in the Chinese market, rare studies comprehensively investigate the determinacies of IPO underpricing. Our study aimed to find the potential determinants of IPOs underpricing in the Internet Industry.

Based on the literature review, this study firstly selected seven variables possibly affecting to IPOs underpricing. Then, we built a regression model to explore which determinants have statistical significance on the IPOs underpricing rate. Third, we used the principal component analysis to find the principal components in our model. After that, three interaction terms were extracted and added to the interaction term regression model to check the initial regression results. Additionally, the robustness check was used to check our regression results by replacing return on assets into return on equity. Besides, the one-way ANOVA test was applied to analyze which variable alone is statistically significant on the IPOs underpricing rate.

We found that IPOs underpricing of Internet companies have some similarities and differences with IPOs underpricing in other industries. First, the oversubscription rate positively drives the IPOs underpricing rate, which is conflicted with the study of Chang et al. (2008). Secondly, we find that the profitability of Internet companies doesn't drive the IPOs underpricing, which is consistent with Wahyusari's study (2013). Thirdly, the reputation of underwriters is negatively correlated with the underpricing rate of IPOs in Internet companies. Still, such a relationship is not significant, which is consistent with Carter et al. (1998). In addition, the issuing price of IPOs actively drives the underpricing rate of IPOs, which is very consistent with the research results of Song et al. (2014). For the robust check, ROE (return on equity) is used to replace ROA (return on assets). The results of the robust check suggest that the issuing price of IPOs and stock retained earnings rate are two determinants mainly driven the IPOs underpricing rate of the Internet company, which is consistent with the main regression results.

This study also explored the two possible explanations of IPOs underpricing rate by IPOs pricing theory and corporate value theory. For IPOs pricing theory, the company strategically sets a relatively low IPO price to encourage potential investors. Such actions result in speculative transactions and excessive demand for low-cost IPOs. For corporate value theory, the higher value of Internet companies sends a positive signal to investors about the actual value of the company, resulting in more severe IPO underpricing. Our research findings provide a new perspective for relevant scholars to find more potential dominants driving the IPOs underpricing rate on the Internet companies and explain the differences of determinants of IPOs underpricing rate between Internet industry and general industry.

The remainder of our paper is organized as follows. Section 2 introduces the potential determinants theories based on the literature. Section 3 describes the data. Section 4 presents our empirical methodology, our model estimation results, our regression results and our robustness checks. Section 5 gives our discussions, limitations and conclusions.

2. Literature Review and Hypotheses Development

The influencing factor of IPO underpricing has always been an essential and continuous debate topic in the securities trading literature. The determinants of Internet IPO underpricing are complex and broad in theory. We reviewed the relevant theoretical and empirical evidence in the following sections.

2.1 How does Traditional IPO underpricing theory works?

At present, many scholars have put forward the theory of IPO underpricing worldwide and tested it with the data of various stock markets.

Rock (1986) came up with the winner curse hypothesis. He believes that there is information asymmetry in the market. There are investors with information and investors without information in the market. Investors with information can often use their information advantages to buy stocks with investment value, while investors without information can only judge according to the behavior of other investors. Finally, they can only buy stocks that have no investment value and are avoided by investors who have information. When investors without information notice the "winner curse", they will withdraw from the market. Because the stock underwriters need to attract these public investors who do not know the information, they have to reduce the IPO price to make up for the risks borne by those who do not possess the information and ensure the smooth progress of the issuance. Therefore, this means that the underpricing is to reward informed investors who disclose private information.

Baron (1982) built up a model based on the buyer's monopoly of investment banks hypothesis. He demonstrates that when enterprises hand over the pricing power of new shares to investment banks with more information advantages, they tend to set the issue price of new shares below its value. On the one hand, this can reduce the risk of investment banks in underwriting or underwriting the stock, which is more conducive to the

successful issuance of new shares and will not affect the reputation of investment banks due to the failure of new share issuance. On the other hand, discount issuance provides investors in investment banks with an "excess rate of return", which can establish a good relationship with investors. Considering that the market lacks adequate supervision over investment banks, investment banks often adopt discount issuance strategies to achieve issuance success.

2.2 Characteristic for IPO underpricing in China's securities market

The rise of China's stock market shows some particularity, making it the highest IPO underpricing rate in the world. Scholars began to explore the reasons behind it. Tian (2010) used the supply and demand analysis framework to model this extreme underpricing. He pointed out that the widespread IPOs underpricing in the Chinese market is mainly because of the supervised IPOs pricing regulations and controlled IPOs stock supply. Su and Fleisher (1999) investigated IPO's first day returns from 1987 to 1995. They interpret this extreme underpricing as a pricing strategy that allows companies to convey their value to investors and speculate on future earnings. Chang et al. (2008) found that the average initial return of IPOs from 1996 to 2004 was 123%. They believe that considering investors know less about IPO stocks and realize the higher risk of buying IPO stocks, the abnormal return of IPO on the first trading day will be higher, which returns to the theory of information asymmetry.

2.3 Potential determinants for Internet IPO underpricing

Although many studies explore the primary causes of IPO Underpricing and the unique factors of IPO underpricing in the Chinese market, rare studies comprehensively investigate the determinacies of IPO underpricing. The following are some studies on the determinants of IPOs. These research results provide crucial guidelines for our research.

First, Lizińska et al. (2014) investigated the price of IPOs listed on the Warsaw stock exchange from 2004 to 2009 and found that the profitability and size of companies affect IPO underpricing. Smaller companies have higher IPOs returns. The higher the profitability of the company before issuance, the higher the IPO underpricing rate. Considering that the company's profitability before IPO will affect IPO underpricing to some extent, the company's profitability is regarded as a variable related to underpricing.

Hypothesis 1: IPO underpricing rate is mainly driven by the profitability of an Internet company.

Secondly, when exploring Internet IPO underpricing and the market value of Internet companies, retained capital is supposed to be taken into consideration. Downes and Heinkel (1982) examined the correlation between the capital retained within the company value. The study found that a high level of retained capital helps keep the interests of the company's management consistent with the interests of new shareholders. At the same time, the higher the proportion of retained capital means that the management has more confidence in the prospects of the IPO company. Considering that the company with higher earnings retained is more capable of setting higher pricing for IPO and thus signify the higher value of the company to potential investors, such high retained earnings will help increase IPO underpricing.

Hypothesis 2: IPO underpricing rate is driven by the retained earnings rate of an Internet company.

In addition, the reputation and quality of underwriters are essential considerations for Internet IPO underpricing. Beatty and Ritter (1986) and Kim and Ritter (1999) show a negative correlation between underwriter reputation and the initial performance of IPOs. This negative relationship is attributed to the certification role played by reputable underwriters. Reputable underwriters often have more detailed financial reports and stricter evaluation procedures for listed companies. They help to reduce information asymmetry between owners and potential investors. Therefore, this dramatically weakens the underpricing of the IPOs.

Internet company's tactically high IPOs pricing strategy will affect IPOs underpricing to some extent. Slama Zouari et al. (2011) believe that the company will not arbitrarily set IPOs quotations. The company might charge a relatively low price to encourage potential investors to subscribe to company shares and ensure the success of the IPOs. Such a strategy will systematically lead to excessive demand for securities, resulting in greater underpricing. Also, Chowdhry and Sherman (1996) content that potentially high-priced IPOs may attract more investors seeking high potential capital returns. If the company discloses the IPO price before bidding, it is likely to involve vital information disclosure. This will lead to increased demand for the company's shares, especially when investors realize that the issue price is low.

Hypothesis 3: IPO underpricing rate is driven by the issuing price of the IPO.

The age of the issuing company is also one of the factors affecting IPO underpricing. Zhou (2012) analyzed the influencing factors of IPO underpricing in ChiNext and found a positive correlation between company age and IPO underpricing rate. The younger the company, the lower the underpricing rate. Although the enterprises listed in the ChiNext are generally young, and most are high-tech, investors prefer to choose a well-developed

company stock. Also, a similar conclusion was drawn by Megginson et al. (1991) that the company's age negatively affects the IPOs underpricing. Compared with the old company, the newly established company shows higher prior uncertainty. Young companies with less experience are unlikely to be well evaluated by financial analysts because they do not have enough historical published financial data.

Hypothesis 4: IPO underpricing rate is driven by the age of internet companies.

Generally speaking, investors' demand for IPO will affect IPO underpricing, which is reflected in the subscription degree of IPO. Some studies use the oversubscription rate to represent investors' demand for IPO to explain the underpricing rate on the first day of IPO. Hanley (1993) found a positive correlation between subscription rate and initial performance scale in American IPO samples. Slama Zouari et al. (2011) analyzed the samples of IPOs in the Tunisian stock market and found that there was a positive correlation between the oversubscription rate and IPO underpricing, which was understood as that investors' overreaction in the short term affected IPO underpricing.

Media exposure might be an influencing factor that affects Internet IPO underpricing. Bajo & Raimondo (2017) investigated more than 2800 US IPOs and more than 27000 newspaper articles and found that positive media reports were positively correlated with IPO underpricing. Duchame et al. (2001) pointed out that the existence of high-quality underwriters and greater media exposure before IPO are uniquely related to Internet IPO underpricing. For popular Internet IPOs that received more media attention before the IPO date, the return performance on the first day after the IPO is often worse. Besides, three factors have a decisive impact on Internet IPO underpricing: (1) media speculation promotes underpricing; (2) Internet companies put their funds on the desktop so that they can follow up financing offers to follow up underpriced IPOs; (3) Underpricing is a brand promotion activity aimed at improving consumers' awareness of Internet companies. However, Bhattacharya et al. (2009) linked the Internet IPO and non-internet IPO from 1996 to 2000 and all the related news. They found that the media was more active in Internet IPO during the sharp rise in share prices, but the media hype could not explain the Internet bubble.

At the same time, the company's long listing time will also harm IPO underpricing. Mok and Hui (1998) and Su and Fleischer (1999), according to the IPO issuance data of the Shanghai Stock Exchange, it is found that there is a positive correlation between the average initial return of IPO and the listing time. When the company is listed for a long time, the market may modify the expectation of its future value, thus affecting the subsequent underpricing level.

Besides, the company scale may affect IPOs underpricing. Cassia et al. (2014) studied 182 IPOs in the Italian stock exchange and found that the company size is negatively correlated with the price update in IPOs, which means that smaller companies tend to have higher IPOs underpricing rates.

In short, based on various assumptions and explanations brought out by previous studies, influencing factors for Internet IPOs includes company profitability, company value represented by retained capital, underwriter reputation, the age of issuing company, the demand for the IPO, delay in listing time, excessive IPO pricing, and issuance scale may potentially impact Internet IPO underpricing. Therefore, this study will further explore the decisive factors of Internet IPO underpricing by integrating the conclusions of previous studies and using the evidence from China stock exchange.

3. Data and Methodology

3.1. Data and variables

This research adopts one data source: the Wind financial database.

By using the industry classification function in the Wind database, this study screened 63 Internet IPOs from 1991 to 2021. Many factors are affecting the IPOs underpricing of listed companies. According to previous studies, this study comprehensively considers seven possible influencing factors: ROA, retained earnings rate, oversubscription rate, IPOs pricing, the reputation of the primary underwriter, company age and company size. The following is a specific description of the variable:

IPOs underpricing rate represents the closing price of new shares/issuance price of new shares - 1 on the first trading day. The IPOs underpricing rate of each Internet stock is gained directly from the wind database. The company age is calculated from the company's establishment time to the listing time in the Wind database. IPOs Pricing is the issuing price of the IPOs, which can be obtained directly from the wind database. The company's ROA the year before the IPO is collected and used to indicate the company's profitability before the IPO. Retained earnings rate is indices to measure the value of the company. It is calculated through retained earnings per share/issue price. Retained earnings per share are collected from the Wind database. The retained earnings per share here is the company's retained earnings per share in the year before the IPO. Oversubscription rate is the ratio of the number of subscribed shares to the number of issued shares. The number of subscribed shares and the number of issued shares are found in the Wind database. However, three company's oversubscription rates are missing. The reputations of the primary underwriter denote the popularity of the underwriter. This is a dummy variable, which is created according to the underwriter ranking in the wind

database. If the underwriter responsible for IPO is within 20 in the rankings of IPO year, it is a high-profile underwriter and marked as 1 in the datasheet; Otherwise, it is marked as 0. The enterprise size is a dummy variable made according to the classification of the company scale in the wind database. This study marks large and medium companies as one and small companies as zero.

3.2. Methodology

To analyze the correlation between the IPOs underpricing rate and determinants, this study takes the IPOs underpricing rate as a dependent variable and establishes a regression model. Based on the previous studies in the literature review section, this study selects the independent variables, including ROA, company age, capital retained rate, oversubscription rate, IPO pricing, underwriter reputation (dummy variable), and company size (dummy variable).

In order to study the determinants of Internet IPO underpricing rate, this study conducts multivariable regression. The regression is based on the following equation:

$$UNP_{i,t} = \beta_0 + \beta_1 ROA_{i,t-1} + \beta_2 PRICE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 OVER_{i,t} + \beta_5 REAR_{i,t-1} + \beta_6 REPU_{i,t} + \beta_7 FSIZE_{i,t} + \varepsilon_{i,t} \quad (1)$$

where UNP is the underpricing rate of IPO; ROA refers to company ROA in the prior-issuing year; AGE refers to the natural logarithm of the age of the issuing company; $PRICE$ refers to the natural logarithm of the IPO pricing; $REAR$ refers to retained capital rate; $OVER$ refers to the natural logarithm of the oversubscription rate of IPO; $FSIZE$ (dummy variable) refers to the size of the company; $REPU$ (dummy variable) refers to the reputation of the primary underwriter.

Table 1 Descriptive Data

Table 1 shows the brief descriptive statistical data of 63 IPO underpricing during 1998-2021. $UNP_{i,t}$ is the underpricing rate of IPO; $ROA_{i,t-1}$ refers to company ROA in the prior-issuing year; $AGE_{i,t}$ refers to the natural logarithm of the age of the issuing company; $PRICE_{i,t}$ refers to the natural logarithm of the IPO pricing; $REAR_{i,t-1}$ refers to retained capital rate; $OVER_{i,t}$ refers to the natural logarithm of the oversubscription rate of IPO; $FSIZE_{i,t}$ (dummy variable) refers to the size of the company; $REPU_{i,t}$ (dummy variable) refers to the reputation of the primary underwriter. In the statistical data of IPO underpricing rate, the degree of IPO underpricing varies widely, ranging from 12% to 1500%. Moreover, the median is lower than the average, which indicates that the skewness of the sequence of IPO underpricing rate is on the right. Source: Wind financial database.

Variables	Obs.	Average	Median	StdDev	Kurtosis	Skewness	Min	Max
$UNP_{i,t}$	63	136.936	68.939	238.084	22.2208	4.4934	-11.969	1498.000
$PRICE_{i,t}$	63	20.031	18.000	13.966	0.8270	0.9830	1.000	63.700
$AGE_{i,t}$	63	10.111	9.000	5.968	0.4394	0.7653	1.000	27.000
$REPU_{i,t}$	63	0.683	1.000	0.469	-1.3998	-0.8036	0.000	1.000
$FSIZE_{i,t}$	63	0.318	0.000	0.469	-1.3998	0.8036	0.000	1.000
$ROA_{i,t-1}$	63	19.787	16.890	14.531	5.1269	-0.0860	-39.940	64.330
$REAR_{i,t-1}$	63	0.120	0.097	0.150	28.5921	4.4954	-0.160	1.088
$OVER_{i,t}$	60	2271.944	647.637	2703.901	0.0744	1.0848	18.297	9194.328

4. Results and Discussions

4.1 Main Results

In order to explore Internet IPO underpricing, this paper takes 63 A-share Internet companies as the research object and considers several possible influencing factors to investigate empirical analysis. In Table 2, we examine the correlation matrix of the variables used. The correlation matrix shows a weak correlation between the firm size and the oversubscription rate, whose correlation coefficient is 0.696. However, there is no correlation among other explanatory variables.

Table 2 Correlation Matrix

Table 2 shows the correlation among each variable selected in the study. $UNP_{i,t}$ is the underpricing rate of IPO; $ROA_{i,t-1}$ refers to company ROA in the prior-issuing year; $AGE_{i,t}$ refers to the natural logarithm of the age of the issuing company; $PRICE_{i,t}$ refers to the natural logarithm of the IPO pricing; $REAR_{i,t-1}$ refers to retained capital rate; $OVER_{i,t}$ refers to the natural logarithm of the oversubscription rate of IPO; $FSIZE_{i,t}$ (dummy variable) refers to the size of the company; $REPU_{i,t}$ (dummy variable) refers to the reputation of the primary underwriter. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	$ROA_{i,t-1}$	$PRICE_{i,t}$	$AGE_{i,t}$	$OVER_{i,t}$	$REAR_{i,t-1}$	$REPU_{i,t}$	$FSIZE_{i,t}$
$ROA_{i,t-1}$	1	.275** (-0.029)	-0.036 (-0.781)	-0.195 (-0.126)	0.013 (-0.921)	-0.164 (-0.199)	-0.188 (-0.139)
$PRICE_{i,t}$.275** (-0.029)	1	.309** (-0.014)	0.043 (-0.739)	-.480*** (<.001)	-0.141 (-0.271)	0.228* (-0.073)
$AGE_{i,t}$	-0.036 (-0.781)	.309** (-0.014)	1	.254** (-0.045)	-0.018 (-0.887)	-0.211* (-0.097)	.382** (-0.002)
$OVER_{i,t}$	-0.195 (-0.126)	0.043 (-0.739)	.254** (-0.045)	1	0.169 (-0.185)	-0.205 (-0.108)	.696*** (<.001)

$REAR_{i,t-1}$	0.013 (0.921)	-.480*** (<.001)	-0.018 (0.887)	0.169 (0.185)	1	0.074 (0.564)	0.017 (0.897)
$REPU_{i,t}$	-0.164 (0.199)	-0.141 (0.271)	-0.211* (0.097)	-0.205 (0.108)	0.074 (0.564)	1	-0.123 (0.338)
$FSIZE_{i,t}$	-0.188 (0.139)	0.228* (0.073)	.382** (0.002)	.696*** (<.001)	0.017 (0.897)	-0.123 (0.338)	1

In Table 3, KMO and Bartlett's test reveals that the principal component analysis is statistically significant, indicating that the fitting degree is good. Also, it shows that the obtained principal components have strong ability to concentrate the original variable information. The principal component matrix shows that there are three principal components in this model. In the first principal component, the value of the firm size is 0.85; the value of the oversubscription ratio is 0.769; the value of the age of company is 0.661, indicating that the firm size, the oversubscription rate and the age of company mainly constitute the first principal component. In the second principal component, the value of the issuing price of IPOs is -0.752 and the value of retained earnings rate is 0.690, indicating that the issuing prices and the retained earnings rate mainly constitute the second principal component. In the third principal component, the value of the retained earnings rate is 0.556 and the value of return on assets (ROA) is 0.649, indicating that the retained earnings rate and return on assets mainly constitute the third principal component.

Table 3 Factor analysis: KMO and Bartlett's Test and principal component Result

This table shows the result for the principal component analysis: Where $ROA_{i,t-1}$ refers to company ROA in the prior-issuing year; $AGE_{i,t}$ refers to the natural logarithm of the age of the issuing company; $PRICE_{i,t}$ refers to the natural logarithm of the IPO pricing; $REAR_{i,t-1}$ refers to retained capital rate; $OVER_{i,t}$ refers to the natural logarithm of the oversubscription rate of IPO; $FSIZE_{i,t}$ (dummy variable) refers to the size of the company; $REPU_{i,t}$ (dummy variable) refers to the reputation of the primary underwriter.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.512
Bartlett's Test of Sphericity	Approx. Chi-Square	96.476
	df	21
	Sig.	1.21E-11

Component Matrix			
	Component		
	1	2	3
$FSIZE_{i,t}$	0.850	0.231	-0.121
$OVER_{i,t}$	0.769	0.412	0.068
$AGE_{i,t}$	0.661	-0.132	0.059
$PRICE_{i,t}$	0.441	-0.752	-0.163
$REAR_{i,t-1}$	-0.098	0.690	0.556
$ROA_{i,t-1}$	-0.131	-0.551	0.649
$REPU_{i,t}$	-0.398	0.250	-0.562

In Table 4, the regression results show that the issuing prices and the retained earnings rate are statistically significant at the 1% level. Other explanatory variables include ROA, company age, oversubscription rate, company size and underwriter reputation, which seem to have no impact on the underpricing level of IPOs. So, we can claim that the internet IPOs underpricing is mainly driven by issuing price and retained earnings, rather than ROA, company age, oversubscription rate, company size and underwriter reputation. Besides, the results also are economically significant. For example, the coefficient of the issuing price is -104.32, which means the higher IPOs pricing alleviates IPOs underpricing, and the lower IPOs pricing makes IPOs underpricing more

serious. Additionally, the coefficient on the retained earnings rate is 580.92, suggesting that higher retained earnings lead to a higher IPOs underpricing rate.

Table 4 Regression Result

This table shows the result for the regression equation:

$$UNP_{i,t} = \beta_0 + \beta_1 ROA_{i,t-1} + \beta_2 PRICE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 OVER_{i,t} + \beta_5 REAR_{i,t-1} + \beta_6 REPU_{i,t} + \beta_7 FSIZE_{i,t} + \varepsilon_{i,t}$$

Where $UNP_{i,t}$ is the underpricing rate of IPO; $ROA_{i,t-1}$ refers to company ROA in the prior-issuing year; $AGE_{i,t}$ refers to the natural logarithm of the age of the issuing company; $PRICE_{i,t}$ refers to the natural logarithm of the IPO pricing; $REAR_{i,t-1}$ refers to retained capital rate; $OVER_{i,t}$ refers to the natural logarithm of the oversubscription rate of IPO; $FSIZE_{i,t}$ (dummy variable) refers to the size of the company; $REPU_{i,t}$ (dummy variable) refers to the reputation of the primary underwriter. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Model1
Intercept	328.713 (2.775)
$ROA_{i,t-1}$	-0.168 (-0.091)
$PRICE_{i,t}$	104.315*** (-2.918)
$AGE_{i,t}$	5.149 (0.150)
$OVER_{i,t}$	23.931 (1.216)
$REAR_{i,t-1}$	580.930*** (3.031)
$REPU_{i,t}$	-37.818 (-0.753)
$FSIZE_{i,t}$	-48.702 (-0.643)
Obs.	63
Adj-R ²	0.394

4.2 Additional Results

To investigate whether the interaction terms may affect the regression result, three interaction variables extracted from the principal component analysis are added into the previous regression model. The following is equation:

$$UNP_{i,t} = \beta_0 + \beta_1 ROA_{i,t-1} + \beta_2 PRICE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 OVER_{i,t} + \beta_5 REAR_{i,t-1} + \beta_6 REPU_{i,t} + \beta_7 FSIZE_{i,t} + \beta_8 FSIZE_{i,t} \times OVER_{i,t} \times AGE_{i,t} + \beta_9 PRICE_{i,t} \times REAR_{i,t-1} + \beta_{10} REAR_{i,t-1} \times ROA_{i,t-1} + \varepsilon_{i,t} \quad (2)$$

Where *UNP* is the underpricing rate of IPO; *ROA* refers to company ROA in the prior-issuing year; *AGE* refers to the natural logarithm of the age of the issuing company; *PRICE* refers to the natural logarithm of the IPO pricing; *REAR* refers to retained capital rate; *OVER* refers to the natural logarithm of the oversubscription rate of IPO; *FSIZE* (dummy variable) refers to the size of the company; *REPU* (dummy variable) refers to the reputation of the primary underwriter. *FSIZE* × *OVER* × *AGE* refers to the product of *FSIZE*, *OVER*, and *AGE*. *PRICE* × *REAR* refers to the product of *PRICE* and *REAR*. *REAR* × *ROA* refers to the product of *REAR* and *ROA*.

In Table 5, the interaction term analysis results exhibit that the issuing prices, the oversubscription rate, the retained earnings rate, and the product of the issuing prices and the retained earnings rate are statistically significant. The coefficients of the issuing price of IPOs are -103.337, indicating that the issuing price of IPOs is negative relative to the IPOs underpricing rate. The coefficients of the oversubscription rate are 0.086, indicating that the oversubscription ratio is positive relative to the IPOs underpricing rate. The coefficients of the retained earnings rate are 848.983, indicating that the retained earnings ratio is positive relative to the IPOs underpricing rate. The coefficients of the product of the issuing prices and the retained earnings rate are -578.407, meaning that the product of issuing price and retained earnings ratio negatively affect the IPOs underpricing rate.

In Table 5, VIF exhibits the degree of multicollinearity among each variable. The value of VIF for the firm size and the interaction term of the firm size, the oversubscription rate and the age of company is 23.052 and 24.757, respectively. Both two values are greater than 10, denoting that there is multicollinearity between each of these two variables and the underpricing rate. However, such multicollinearity will not affect the regression results because they are not statistically significant variables.

4.2 Robustness Checks

In order to study the robustness of the results, we replace the profitability index ROA of the company one year before listing with ROE. The regression is based on the following equation:

$$UNP_{i,t} = \beta_0 + \beta_1 ROE_{i,t-1} + \beta_2 PRICE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 OVER_{i,t} + \beta_5 REAR_{i,t-1} + \beta_6 REPU_{i,t} + \beta_7 FSIZE_{i,t} + \varepsilon_{i,t} \quad (3)$$

Where *UNP* is the underpricing rate of IPOs; *ROE* refers to the company's ROE in the prior-issuing year; *AGE* refers to the natural logarithm of the age of the issuing company; *PRICE* refers to the natural logarithm of the IPO pricing; *REAR* refers to retained capital rate; *OVER* refers to the natural logarithm of the oversubscription rate of IPO; *FSIZE* (dummy variable) refers to the size of the company; *REPU* (dummy variable) refers to the reputation of the primary underwriter.

Table 6 robustness checks result notes that *ROE* does not show statistical significance when ROA is replaced by ROE. This result can be construed as that the profitability of Internet companies is not related to the degree of underpricing of IPOs. These results are consistent with those of Rodoni et al. (2018). Also, the issuing price and the retained earnings rate still exhibit statistical significance that is the same as the regression results in Table 4.

Table 5 Additional Result: interaction term Analysis

This table shows the result for the interaction term regression equation:

$$UNP_{i,t} = \beta_0 + \beta_1 ROA_{i,t-1} + \beta_2 PRICE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 OVER_{i,t} + \beta_5 REAR_{i,t-1} + \beta_6 REPU_{i,t} + \beta_7 FSIZE_{i,t} + \beta_8 FSIZE_{i,t} \times OVER_{i,t} \times AGE_{i,t} + \beta_9 PRICE_{i,t} \times REAR_{i,t-1} + \beta_{10} REAR_{i,t-1} \times ROA_{i,t-1} + \epsilon_{i,t}$$

Where $UNP_{i,t}$ is the underpricing rate of IPO; $ROA_{i,t-1}$ refers to company ROA in the prior-issuing year; $AGE_{i,t}$ refers to the natural logarithm of the age of the issuing company; $PRICE_{i,t}$ refers to the natural logarithm of the IPO pricing; $REAR_{i,t-1}$ refers to retained capital rate; $OVER_{i,t}$ refers to the natural logarithm of the oversubscription rate of IPO; $FSIZE_{i,t}$ (dummy variable) refers to the size of the company; $REPU_{i,t}$ (dummy variable) refers to the reputation of the primary underwriter. $FSIZE_{i,t} \times OVER_{i,t} \times AGE_{i,t}$ refers to the product of $FSIZE_{i,t}$, $OVER_{i,t}$, and $AGE_{i,t}$. $PRICE_{i,t} \times REAR_{i,t-1}$ refers to the product of $PRICE_{i,t}$ and $REAR_{i,t-1}$. $REAR_{i,t-1} \times ROA_{i,t-1}$ refers to the product of $REAR_{i,t-1}$ and $ROA_{i,t-1}$. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Coefficients	Standard Error	t Stat	P-value	Tolerance	VIF
Intercept	296.242	102.132	2.901	0.005		
$ROA_{i,t-1}$	2.642	1.707	1.547	0.128	0.651	1.535
$PRICE_{i,t}$	-103.337	31.835	-3.246	0.002***	0.509	1.964
$AGE_{i,t}$	40.602	31.155	1.303	0.198	0.668	1.496
$OVER_{i,t}$	29.398	16.817	1.748	0.086*	0.459	2.177
$REAR_{i,t-1}$	848.983	267.473	3.174	0.003***	0.250	3.992
$REPU_{i,t}$	-55.381	45.645	-1.213	0.231	0.762	1.312
$FSIZE_{i,t}$	-70.016	204.883	-0.342	0.734	0.043	23.052
$FSIZE_{i,t} \times OVER_{i,t} \times AGE_{i,t}$	6.951	21.330	0.326	0.746	0.040	24.757
$PRICE_{i,t} \times REAR_{i,t-1}$	-578.407	125.444	-4.611	0.000***	0.532	1.879
$REAR_{i,t-1} \times ROA_{i,t-1}$	1.218	13.195	0.092	0.927	0.358	2.790

In further research, we performed one-way ANOVA on seven variables to test the impact of each variable on IPOs underpricing rate. The result of the issuing price on the underpricing rate One-way ANOVA in Table 7 shows the statistical significance, implying that the higher issuing price, the more serious IPOs underpricing rate. The result of the oversubscription rate on the underpricing rate One-way ANOVA in Table 8 also shows statistical significance, suggesting that higher oversubscription rate, higher underpricing rate of IPOs.

Table 6 Robustness Test Result

This table shows the result for the regression equation:

$$UNP_{i,t} = \beta_0 + \beta_1 ROE_{i,t-1} + \beta_2 PRICE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 OVER_{i,t} + \beta_5 REAR_{i,t-1} + \beta_6 REPU_{i,t} + \beta_7 FSIZE_{i,t} + \varepsilon_{i,t}$$

Where $UNP_{i,t}$ is the underpricing rate of IPO; $ROE_{i,t-1}$ refers to company ROE in the prior-issuing year; $AGE_{i,t}$ refers to the natural logarithm of the age of the issuing company; $PRICE_{i,t}$ refers to the natural logarithm of the IPO pricing; $REAR_{i,t-1}$ refers to retained capital rate; $OVER_{i,t}$ refers to the natural logarithm of the oversubscription rate of IPO; $FSIZE_{i,t}$ (dummy variable) refers to the size of the company; $REPU_{i,t}$ (dummy variable) refers to the reputation of the primary underwriter. *, **, and *** denote statistical significance at the 10%, 5%, and 1% level, respectively.

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	336.5156	119.7296	2.8106	0.0068	96.5721	576.4591
$ROE_{i,t-1}$	-0.5921	1.5187	-0.3899	0.6981	-3.6358	2.4515
$PRICE_{i,t}$	-102.1938	34.0160	-3.0043	0.0040***	-170.3635	-34.0242
$AGE_{i,t}$	5.1671	34.0745	0.1516	0.8800	-63.1197	73.4538
$OVER_{i,t}$	23.2871	19.6453	1.1854	0.2410	-16.0830	62.6571
$REAR_{i,t-1}$	599.8607	194.5621	3.0831	0.0032***	209.9495	989.7719
$REPU_{i,t}$	-39.8774	49.6738	-0.8028	0.4256	-139.4259	59.6711
$FSIZE_{i,t}$	-52.7362	76.0974	-0.6930	0.4912	-205.2387	99.7663

Table 7 the issuing price of IPOs on IPOs underpricing rate one-way ANOVA

Origin Difference	One-way ANOVA Results				
	SS	df	MS	F	P-value
Different Treatments	3437793.098	57	60312.160	3.936	0.064
Internal Treatments	76621.029	5	15324.206		
Total	3514414.126	62			

Table 8 the oversubscription rate on IPOs underpricing rate one-way ANOVA

Origin Difference	One-way ANOVA Results				
	SS	df	MS	F	P-value
Different Treatments	2256326.603	22	102560.3	3.261	<.001
Internal Treatments	1258087.523	40	31452.188		
Total	3514414.126	62			

5. Conclusions

5.1. Discussions and Findings

The regression results in Table 4 show that there is a negative correlation between IPOs price and IPOs underpricing. The higher IPOs price alleviates IPOs underpricing, and the lower IPOs price makes IPOs underpricing more serious. In this regard, we believe that such a negative correlation is associated with the company's strategy in setting IPO quotations. The company sets relatively low IPOs prices to encourage potential investors. In addition, investors may have high uncertainty about the future performance of Internet companies with low-price IPOs. Considering that information uncertainty usually makes speculative transactions leading to investors' excessive demand for low-price Internet IPOs more attractive, it thus results in a more severe IPO underpricing rate. On the contrary, as investors have less uncertainty about high-price Internet IPOs uncertainty, higher IPOs issuing prices, to some extent, is lessening IPO underpricing rate.

At the same time, the regression results show a positive correlation between retained earnings and IPOs underpricing. Higher retained earnings lead to more severe IPOs underpricing. Considering that the more

confident the management is about its prospects, the more they tend to maintain higher retained earnings. Moreover, according to Jensen and Meckling (1976), the higher retained earnings help the interests of the company's management to be consistent with the interests of shareholders, promoting the value of Internet companies. Therefore, this positive correlation can also be construed as that the higher retained earnings make the management send a positive signal about the company's real value to investors, resulting in more severe IPO underpricing.

The additional regression results in Table 5 reveal that as the interaction terms are taken into account, the issuing price and the interaction term of the issuing price and the retained earnings rate is negative relative to the IPOs underpricing rate. The retained earnings rate and the oversubscription rate is positive relative to the IPOs underpricing rate. These results indicate that as the issuing price and retained earnings ratio are taken as a whole, this interaction term will negatively affect the IPOs underpricing rate, which means the retained earnings rate exceeds the issuing price in affecting the IPOs underpricing rate. In that case, the underlying theory can be interpreted that the investors attach much more importance in company value denoted as retained earnings rate than pricing setting of IPOs.

Robustness checks result in Table 6 points out that the profit indicators of Internet companies, whether ROA or ROE, have no significant relation with the underpricing rate of IPOs. These results are consistent with those of Rodoni et al. (2018) that ROA has not significant effect on the underpricing rate of IPOs. In addition, no matter which profit indicators are used, the regression results always show that the retained earnings and the issuing prices are the determinants affecting the underpricing rate of IPOs.

5.2 Limitations

First, this study only collected 63 Internet IPOs of shares in China stock exchange from 1998 to 2021. Sixty-three observations may affect the accuracy of regression results. Secondly, considering the difficulties in obtaining relevant data, this study only investigated seven possible factors driven the underpricing rate of IPOs.

5.3 Conclusions

This study examines the degree of IPOs underpricing of 63 Internet companies from 1998 to 2021. According to the descriptive data in Table 1, the average initial return of Internet company IPOs is 136.936%. Based on the past literature, seven determinants affecting IPOs underpricing rate of Internet companies are taken into account and are used to conduct regressions, robustness check, and one-way ANOVA tests. The regression results show that two variables, retained earnings and issuance price, play a leading role in driving the underpricing rate of Internet company IPOs. The robustness check results suggest that the underpricing rate of Internet company IPOs are still driven by retained earnings and issuance price. In addition, the one-way ANOVA test shows that issue pricing and oversubscription rate also have a positive impact on Internet company IPOs.

We find that IPOs underpricing of Internet companies have some similarities and differences with IPOs underpricing in other industries. First, we find oversubscription rate is positively driven the IPOs underpricing rate. However, Chang et al. (2008) found that there is a negative correlation between the initial stock return and the subscription ratio in China's primary market.

Secondly, we find that the profitability of Internet companies doesn't drive the IPOs underpricing, which is consistent with Wahyusari's study (2013) that the company's ROA has no significant impact on IPOs underpricing. Thirdly, we find a negative relationship between the reputation of underwriters and the underpricing rate of IPOs in Internet companies, but such a relationship is not significant. Our is consistent with Carter et al. (1998) that IPOs stocks performed poorly relative to the market for IPOs handled by well-known underwriters. In addition, we find that the IPO price of IPOs actively drives the underpricing rate of IPOs. This is very consistent with the research results of song et al. (2014) on IPOs underpricing in China, that is, the pricing rules of IPOs are positively correlated with underpricing.

We explore the possible explanation of IPOs underpricing rate by IPOs pricing theory. We believe that the company's strategic IPOs quotation and information uncertainty can explain the underpricing rate of IPOs in the Internet industry. Regarding strategic pricing, the company strategically sets a relatively low IPO price to encourage potential investors. For information uncertainty, investors may be highly uncertain about the future performance of Internet companies with low-cost IPOs, resulting in speculative transactions and excessive demand for low-cost IPOs. Besides, we also investigate the possible explanation of IPOs underpricing rate by corporate value theory. We believe that the more confident the management is about the prospects of the enterprise, the more they tend to maintain high retained earnings. These higher retained earnings are a reflection of the real value of Internet companies. Therefore, the higher value of Internet companies sends a positive signal to investors about the actual value of the company, resulting in more severe IPO underpricing.

As for contributions, our research results are of great significance to the scholars and investors of IPOs in the Internet industry. First, we prove that two dominant factors are driving the IPOs underpricing rate of Internet companies. Secondly, this study's variable selection and correlation regression analysis process can provide

relevant references for scholars to explore the potential impact on Internet company IPOs more comprehensively. In addition, this study reveals the similarities and differences of determinants of IPOs underpricing rate between Internet industry and general industry. Besides, we explore the potential theory of IPOs underpricing rate in the Internet industry, which provides a new perspective for relevant scholars.

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Identify Potential Diversification to Companies through Collaborative Filtering

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Abstract

The industrial fragility of European countries has been a major issue during the latest economic and health crises. Governments have become aware of the partial desertification of our industry but also of the astonishing capacity of the players to reinvent themselves, innovate to find solutions, and show resilience. Everywhere in our society, shaken from all sides, we have seen the emergence of diverse initiatives to overcome the shortages of necessities. In this study, we focus on the ability to diversify from the point of view of a company, which literature has shown to be a major factor in improving industrial resilience. We are interested in the proximity of industrial know-how between two product classes in the HS nomenclature, independent of the country or territory observed. Our goal is to evaluate the ability of a firm that produces product A to adapt its production to produce product B. We analyzed thousands of French companies' websites to label the products they manufacture. From the collected data we built a Recommender System (RS) for diversification based on collaborative filtering (CF). The results show that our Recommender System outperforms methods from macro data analysis, such as co-export analysis on the Product Space or semantic analysis of nomenclatures. We formalize an indicator of a company's agility based on its diversification capabilities. Finally, this work offers new perspectives on the formalization of a measurable Resilience Index (RI).

JEL Codes • L25 Firm Performance: Size, Diversification, and Scope

CCS CONCEPTS • Recommender systems • Network economics • Economics • Sustainability • Economic impact

Additional Keywords: Sustainable production • COVID19 and Economy • Econometric modeling • Resilience Index

Preference of Generation Z Students for a Cooperative Savings Product: A Conjoint Analysis

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Abstract

The goal of this study was to find out which of the cooperative's savings products Generation Z students liked. The role and value of cooperatives in fostering fairness, social justice, and economic development are the focus of this study. This objective is supported by the conjoint analysis, which provides both overall and individual utility models of preference. This study involved 665 respondents, with at least 200 participants from the three identified Higher Education Institutions in the Davao City. Respondents were asked to honestly complete survey questions based on their preferences for four criteria with corresponding levels for cooperative savings products. The cooperative's promotional strategy was discovered to be the most crucial attribute, while convenience was shown to be the least important. Overall, generation Z students prefer a cooperative saving product that raises awareness through social media platforms, has a cooperative image with a pleasant environment, a high interest saving rate, and is close to public locations. Individual preferences of pupils from Generation Z were also discussed.

Keywords: Generation Z, conjoint analysis, cooperative, credit union, savings.

Institutional Quality and Foreign Direct Investment Inflows, Evidence from OECD Economies

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The purpose of this study is to analyse the role of institutional quality in attracting foreign direct investment inflows in OECD countries with annual data over the period of 1996–2017. This study employed a panel ARDL model, PMG estimation introduced by Pesaran et al. (1999), and CS-ARDL method providing robust results in the presence of cross-sectional dependence developed by Chudik and Pesaran (2015). The sample countries are classified into two groups based on their institutional quality: those with low institutional quality and those with high institutional quality. The findings indicate that the overall effect of institutional quality on FDI is not statistically significant in the long or short run. When considering the single aspect of institutional quality, only property rights security matters for inward FDI for the group countries in the long run. However, the overall score is significant only in the long run for countries with low institutional quality. Importantly, the aspects of property rights, corruption, and democratic stability appear to have a positive impact on FDI for those countries. Furthermore, property rights have a greater impact on FDI than others.

The Relation of The Shadow Banking System on The Financial System in China

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Abstract

This paper selects the size of shadow banking, GDP, money supply and leverage ratio as four variables to study how the development of shadow banking affects the development speed and stability of China's economic system. In terms of financial impact, this article discusses potential risks from the institutional and system levels. In China, shadow banking is closely related to traditional commercial banks, so the systemic risks brought by shadow banking can easily be transmitted to the commercial banking industry. In this article, we established the VAR model and created the impulse response diagram and variance decomposition to analyze the correlation and dependence between shadow banking and macroeconomic factors, and found that they can have a lagging effect on each other. After conducting a robustness test, we concluded that the growth of shadow banking and changes in macroeconomic factors have a stable and continuous effect on each other. We use empirical analysis and provide more intuitive figures and conclusions, these diagrams and data will better help understand the conclusions in the literature.

JEL Classification: E32, E51, G21

Keywords: Shadow banking, credit market, economic development.

Financialization in Emerging Europe

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Abstract

This paper contributes to the financialisation literature exploring the dynamics of financialization in eight emerging European economies (EEEs) compared to the Anglo-Saxon countries. Our analysis encompasses the decade before and the years following the financial crisis in 2008, including the latest developments in conjunction with the Covid-pandemic. Hungary, Bulgaria, Croatia, Turkey, and to a lesser extent, Czech Republic and Poland experienced strong financial inflows, and an accumulation of foreign liabilities. Foreign financial flows in Russia were not as significant for the process of financialization, but rather the state itself. In this paper we identify two types of financialization: ‘foreign-finance-led’ and ‘state-led’ financialization, where ‘foreign-finance-led’ financialization is characterized by increase in net capital inflows and subsequently, foreign indebtedness, whereas the government (the state) in the ‘state-led’ financialization has a predominant role in the financialization process. Most of the EEEs fit the ‘foreign-finance-led’ financialization, but with a tendency of a significant state involvement in the financial systems during the Covid-pandemic. Based on the analysis of financialization in EEEs, our findings show that EEEs had variegated financialization dynamics. Financialization in the EEEs was less pronounced compared to United States and United Kingdom. Despite this fact, the dynamics of financialization took a significant pace in the EEEs in the years following the financial crisis of 2008, with rising debt levels during the Covid-pandemic.

Keywords: financialization, financial crises, emerging countries, Central Eastern Europe

JEL classifications: E44, F34, F36, F65, G01, G20, P51, P52

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1. Introduction

There are variances in the interpretations of the concept ‘financialization’. Mader, Mertenés, and van der Zwan (2020) provide an excellent overview of the definitions of financialization existent in the literature. In this paper we will use the definition by Epstein who conceptualised financialization within the framework of

(...) the increasing role of financial motives, financial markets, financial actors, and financial institutions in the operations of the domestic and international economies. Epstein’s (2005: 3)

Our focus in this paper is the literature on financialization in emerging countries. Authors like Bonizzi, Kaltenbrunner, and Powell (2020) used the term ‘subordinate’ financialization to emphasize the emerging countries’ subordinate position in the world production, trade, as well as international finance and capital movements.¹ In this paper we will continue this debate, showing that financialization in most of the countries in our sample has been predominantly driven by foreign capital flows. In Russia, however, foreign capital flows have had a less dominant role in the financialization process. Here, the government’s involvement in the banking system and the financial system overall cannot be overseen. One can speak of state-led financialization, which means a financial system that is:

(...) largely controlled by the state as most key financial firms, including banks, securities firms, insurance companies are state-owned. Pan, Zhang, and Wu (2021: 750)

¹ Cardoso and Faletto (1976) use the term ‘dependent development’ to explain a development dependent on foreign capital.

In the state-led financialization the government plays a predominant important role in encouraging and promoting financialization using various tools. Pan, Zhang, and Wu (2021) explore the financialization dynamics in China and identify two characteristics of state-led financialization in China. On the one hand, the government promoted market-based reforms to open up financial markets, but on the other, supported by state-owned banks and state-owned financial institutions, the government set the main directions for the development of financialization in this country.¹ According to the authors, the combination of the government and state-owned companies on the one hand, and the market-orientation on the other hand, is the key to understanding state-led financialization in China.² We will analyse eight emerging countries in Europe: Poland, Czech Republic, Hungary, Bulgaria, Romania, Croatia, Russia, and Turkey. We will use the abbreviation EEEs (Emerging European economies) for this group of countries. Moreover, for comparison, we will include United States and United Kingdom that are considered to be two of the most financialized countries worldwide. Hopefully more data will become available for our future studies to include the countries in South-Eastern Europe or the CIS (Commonwealth of Independent States).

The period we will concentrate on is the decade before the financial crisis of 2008 and the years thereafter, including 2020, which was characterized by an exogenous shock – the spread of the Covid-pandemic. There are several elements or interpretations of financialization that we will address: external financial liabilities, financial liberalisation, financial system depth, shift from bank-based towards market-based financial system, the debt of the households, nonfinancial corporations (NFCs), and the government, and their external debt position. These will be elaborated in more details in the next section.

The rest of the paper is organised as follows. The second section provides an overview of the existing literature of financialization in emerging countries. The third section gives some stylized facts about the capital account liberalization and the background in which financialization started to thrive in the EEEs. Afterwards we will analyse the development of financialization in the EEEs using eight indicators. In the section that follows we will look at the types of financialization identified in EEEs. The last section concludes.

2. Literature on financialization in emerging countries

Financialization has become a central point of research among scholars in economics, political economy, sociology, and other disciplines especially in humanities particularly since the outbreak of the financial crisis in 2008.³

This paper will necessarily focus on the financialization literature with respect to emerging countries, which does not do justice to the complexity of the research done on financialization at large. The interest on financialization in emerging countries gained momentum in the recent years. For instance, Bonizzi (2013) provided an extensive survey on the main theories used to explain financialization and the characteristics of financialization in emerging countries with particular focus on capital/financial account openness. Moreover, Karwowski and Stockhammer (2017) made a systematic overview of the financialization literature in emerging countries investigating the development of financialization in 17 emerging countries from Asia, Latin America, Africa, and Europe. Our paper can be, to a certain extent, seen as a continuation of the work by Karwowski and Stockhammer (2017).

One nexus between financialization and emerging countries is the Washington Consensus debate on capital/financial account deregulation as one of the recommendations by the IMF and the World Bank (Rodrik 1998, Priewe and Herr 2005, Stiglitz and Ocampo 2008).

Analysis of financialization in the Minskian tradition of boom-bust cycles has been applied to developing/emerging countries by authors like Arestis and Glickman (2002), de Paula and Alves (2000), Kregel (1998) or Schroeder (2002). These authors argued that East-Asian countries went forth with capital account

¹ The Chinese government is interested in promoting financialization, for instance, via encouraging an entry of state-owned enterprises in the stock exchange (Pan and Xia 2014).

² Pan, Zhang, and Wu (2021) argue that the forms and characteristics of state-led financialization can vary between countries.

³ For illustration, the number of journal articles that dealt with financialization increased four times between 2018 and 2010 (see Figure 1.1 in Mader, Mertens, and van der Zwan 2020:4).

deregulation that spurred large amounts of capital flowing in these countries, increasing foreign indebtedness of the domestic private sector. Often these capital flows were directed towards the real-estate and the stock markets, which created asset-price bubbles that were doomed to burst as soon as economic growth slowed down and the exchange rate depreciated.

Frenkel and Rapetti (2009) addressed the financial crisis of 2008/2009 and its effects on the developing/emerging countries. They argued that the conditions that were conducive for the financial crisis were different in developing compared to developed/advanced world. In developing countries, the specific set of macroeconomic policy interventions, including capital market deregulation encouraged higher risk-taking of the private sector.

Several authors emphasized the international aspect of financialization and the dependency of emerging countries on foreign capital flows for development (Becker et al. 2010, Bortz and Kaltenbrunner 2018, Bonizzi and Kaltenbrunner and Powell 2020, Datz 2008, Kaltenbrunner and Paineira 2015, Paineira 2011, 2012, Tyson and McKinley 2014). This strand emphasizes the necessity of maintaining relatively high interest rates and overvalued exchange rates that itself constrains the governments and central banks in the conduct of macroeconomic policies. Bonizzi, Kaltenbrunner, and Powell (2020) argue that emerging countries have a subordinate position in the international aspect of financialization. They are subordinate in the global value chains, which means that they provide raw materials and low value-added intermediate products to the leading companies of the value-chain (Dühnhaupt and Herr 2020). Emerging countries are also dependent on foreign capital flows (denominated in a foreign currency) and have to offer relatively high interest rates because their currency is positioned at a low level in the currency hierarchy compared to advanced countries. According to these authors, financialization worsens the already subordinate position of emerging countries.

From the Regulation school perspective, Becker (2009, 2011) and Becker and Jäger (2010) analysed the accumulation regimes in the Central Eastern European countries. They identified two accumulation regimes for these countries: ‘dependent industrialisation’ and ‘dependent financialization’ regime. The former is characterized by strong growth of the manufactured sector and exports, while the ‘dependent financialization’ regime (Romania, Bulgaria, and the Baltic countries) is characterized by a surge in capital flows in the financial sector that contributed to their de-industrialisation.

More often than not has financialization in emerging countries been applied to individual countries (see for example, Ashman, Mohamed, and Newman, 2013, for South Africa; Lapavitsas, 2009a, Gabor, 2012, for individual countries in Central Eastern Europe; Kalinowski and Cho, 2009, for South Korea; Rethel, 2010, for Malaysia, Hong Kong, and Indonesia).

One attempt to provide a more encompassing analysis of a group of emerging countries is provided by Akcay, Hein, and Jungman (2021). Using macroeconomic demand and growth regime analysis, they identify four regimes: debt-led private demand, export-led mercantilist, weakly-export-led, and domestic demand-led regimes, in which selected emerging countries are classified. China and Argentina are found to have export-led mercantilist regimes, Brazil, and Russia – weakly export-led regimes, India, Mexico and Turkey - domestic demand-led regimes, and South Africa – debt-led private demand boom regime. Karwowski and Stockhammer (2017) provided a systematic comparison across seventeen emerging countries in Asia, Central Eastern Europe, and Latin America using specific indicators of financialization. The authors identified six interpretations in the literature explaining the financialization development in emerging countries. These are: financial deregulation, foreign financial flows, asset price volatility, the shift from bank-based to market-based finance, debt of businesses, and household debt.

3. Notes on the indicators

In the current paper we will analyse the development of financialization in the emerging countries in Europe. Through a descriptive analysis of seven indicators, we want to find out the similarities/differences in financialization between the selected countries in Emerging Europe. The following aspects of financialization will be investigated: degree of financial liberalization, external financial liabilities, financial system depth, shift from ‘bank-based’ towards ‘marketbased’ financial system, the household debt of the households, the NFCs, and the government, and their external debt position.

- a) Degree of financial liberalization

Several authors have in different contexts emphasized the importance of these aspects of financialization for understanding its dynamics. Lapavitsas (2009b) and Correa, Vidal, and Marshall (2012) highlight the significance of financial deregulation for the rise in financialization. They see the origins of financialization in the emerging/developing countries in the 1970s when these countries embarked on a journey of labour market and financial account liberalization.

[F]inance has grown extraordinarily in terms of employment, profits, size of institutions and markets. There has been deregulation, technological and institutional change, innovation, and global expansion. Finance now penetrates every aspect of society in developed countries while its presence has grown strongly in the developing world. (Lapavitsas 2009b: 126).

Financial account deregulation especially in emerging countries has led to substantial increases in capital flows during the 1990s and even more strongly in the 2000s, leading to higher integration of these countries in the international financial structure (Aizenman, Jinjarak, and Park 2013). Financial inflows, particularly when dominated by portfolio flows, tend to increase the fragility of the financial systems in emerging countries.¹ As an indicator for financial liberalization, we will use the Chinn-Ito index. The higher the Chinn-Ito index is, the higher the level of financial account liberalization.²

b) External financial liabilities

Financial flows have been a source of increasing foreign debt in the emerging countries. In the emerging countries in Central Eastern Europe, capital inflows by foreign banks contributed to the financialization dynamics of the former (Gabor 2012). These financial flows were often directed towards the real estate and the construction sectors, and away from productive investment in the manufacturing industry. The index we will use is stock of external liabilities (as a share of GDP) from the Lane/Milesi-Ferretti (2018) database. The higher this indicator, the larger the foreign indebtedness is. In that case, financialization is strongly driven by foreign financial flows.

c) Financial system depth

Financial system deregulation in advanced countries has led to an emergence and growth of non-bank financial institutions, such as pension- and mutual-funds or insurance companies (Toporowski 2000). The assets of insurance companies, financial corporate investors, and pension funds have increased by around four times between the 1980s and 2000s in the UK and the US. We will use the ‘financial development index’ by the IMF as an indicator for the depth of the financial system (IMF 2015). This index shows three dimensions of development of financial institutions and financial markets: depth, access, and efficiency. The higher the value, the more developed the financial system is.³

d) Shift from ‘bank-based’ to ‘market-based’ financial system

¹ Under the assumption that it does not merely entail a change of ownership (like in privatisations, or mergers and acquisitions), but it also involves transfer of know-how and technology, foreign direct investment (FDI) can be favoured as a desirable type of capital, as it can support import substitution and potentially also lead to higher exports Prieue/Herr (2005). According to the same authors, other types of capital flow can also be sustainable, if they do not contribute to currency mismatches. One such example is bank credit denominated in a foreign currency that is used for production and exports. Thailand is a positive case of a country that used its FDI inflows to finance investment and economic growth (Prieue and Herr 2005).

² We use the Chinn-Ito index as an indicator for country’s financial account openness (see the database related to the paper Chinn/Ito, 2006). A country can obtain a score within the range of -1.9 and 2.4. The higher the index is, the more liberalized the financial system is and vice versa. Notes on the methodology of the calculation of the index can be found on the website: http://web.pdx.edu/~ito/Chinn-Ito_website.htm.

³ One can look separately at the development of the three dimensions (depth, access, and efficiency) for each country for both financial markets and financial institutions. However, this kind of analysis goes beyond the scope of our paper. For more information, visit the IMF website: <https://data.imf.org/?sk=F8032E80-B36C43B1-AC26-493C5B1CD33B>

The shift from a bank-based to a market-based financial system has been identified in the literature as another important indicator for financialization. The study of Karwowski and Stockhammer (2017) reviewed the increasing importance of capital markets (relative to bank credit) as a source of funding for firms as one driving force behind financialization. Whereas in the bank-based systems, bank credit is the most dominant source of finance for firms, in the market-based systems capital markets are the key source of funding for firms (Gerschenkron 1962). Beginning in the late 1970s when the process of financial market liberalization in the advanced countries started to unravel, stock markets gained significance (Aglietta and Breton 2001). Lapavitsas (2009a) argued that in relation with the Washington Consensus ‘recommendations’ for capital market deregulation by the World Bank and the International Monetary Fund (IMF), a shift from a bank-based to a market-based financial systems occurred in the emerging countries. The stock market value traded relative to bank credit (both as a share of GDP) will be used as an indicator for the shift towards ‘market-based’ finance. The higher the indicator, the bigger the tendency towards ‘market-based’ finance.

e) Debt of households, the government, and the corporate sector

Accumulation of debt among households and NFCs has been largely associated with financialization in the emerging countries in Central Eastern Europe (Gabor 2012). The entry of foreign banks in these countries has created ample opportunities for favourable credit for households that unlike firms, do not typically use credit for increasing their cash flow (Karwowski and Stockhammer 2017). NFCs, especially in advanced countries, have been put under pressure to make short-term investments in order to stay internationally competitive. Hence, there is a tendency of NFCs becoming quite active in the financial markets. Authors have pointed towards a shift of firms from stakeholder to shareholder corporate structure (see Lazonick and O’Sullivan, 2000 for the US). Household debt and NFCS debt (both as a share of GDP) will be used as indicators for the exposure of households and NFCs to financial markets and their debt burden.

The government is an important actor in the process of financialization as well. Karwowski (2019) identified four ways in which the state/government is involved: through adoption of financial logic, supporting financial innovation practices, encouraging financial accumulation, and through financialization of the ‘lives’ of its population. The author explores the changing role of the government in these financialization venues by focusing on monetary policy (central banks’ pursuit of financial market deregulation and promotion of market-based liquidity management of the financial institutions) and fiscal policy (through creating secondary markets for public debt and through transformation of public services, like pensions and social provision). In order to have a more complete analysis of the government’s involvement in the financialization dynamics we need to also look at the structure of public revenues and expenditures. But, due to the limits of this paper, we will focus primarily on the government debt.

f) External debt position of the households, the government, and the corporate sector

It is, however, even more important to look at the composition of debt of the economic sectors. Capital account liberalisation has made the financial markets of EEEs more vulnerable and exposed to capital fluctuations in and out of the countries. Accompanied by exchange rate fluctuations, capital account deregulation has impaired the domestic economic actors in servicing their external debt.¹ Driven by the relatively low borrowing costs of credit

denominated in euros, dollars, or Swiss franc, firms in EEEs preferred external finance to credit denominated in a domestic currency. If the domestic currency has lost one or more of its money functions, dollarization and currency mismatch can occur. To address the external debt position of the economic actors, we will look at the

¹ We apply here the definition of the World Bank with regards to external debt: “Gross external debt, at any given time, is the outstanding amount of those actual current, and not contingent, liabilities that require payment(s) of interest and/or principal by the debtor at some point(s) in the future and that are owed to nonresidents by residents of an economy.” See the website of the World Bank for more information:

<https://datahelpdesk.worldbank.org/knowledgebase/articles/474124-what-is-external-debt>

area countries in the early-2000s. Interest rates in the EEEs as well as in the Euro area declined in the aftermath of the financial crisis in 2008. However, short-term interest rates in the EEEs remained higher than in the Euro area. The biggest interest rate differential relative to the market interest rates in the Euro area can be spotted in Turkey, Romania, and Poland.

external debt of the private sector (including the external debt of the households, financial and non-financial companies, and banks), and the external public debt (composed of the external debt of the government, and the central bank).¹

4. The drivers of financialization in emerging Europe

The restructuring of the EEEs after the collapse of the Soviet Union in the early 1990s was accompanied by substantial losses in output and employment. But, by the mid-1990s most of the countries, with the exception of Bulgaria, Romania, and Russia, managed to recover. In the late 1990s Russia was hit by a financial crisis, which also had an impact, although to various degree, on the rest of the EEEs. From the early-2000s until the outbreak of the financial crisis of 2008, the countries enjoyed an almost uninterrupted economic growth supported by large capital inflows.

Towards the late 1990s the EEEs started the process of capital account liberalization, as a result of which these countries became an attractive destination for capital inflows. Another important factor that played a role in attracting a sizeable amount of capital was the entry of Poland, Hungary, Czech Republic, Bulgaria, Romania, and Croatia, and the announced candidacy of Turkey in the European Union (Becker et al. 2015: 87). The EU accession was particularly important for the capital inflows being directed in the banking sector of these emerging countries.

Against the background of highly liberalised capital markets, banks in EEEs could receive credit from the Western European banks at relatively low money-market interest rates. The short-term interest rates in the Euro area and Switzerland were lower than the interest rates in the EEEs. After a period of relatively high nominal interest rates to fight the inflationary development in the late-1990s, nominal interest rates started declining at the beginning of the 2000s. Nonetheless, the latter had to be kept at a relatively high level to compensate for the lower currency premium in the EEEs relative to the Euro area. Table 1 shows the development of the interest rates on average in the period before and after the Great Recession. EEEs (with the exception of Czech Republic) had higher nominal short-term interest rates than the Euro

Table 1: Nominal and real short-term interest rates in EEEs and the Euro area, average values 2000-2020

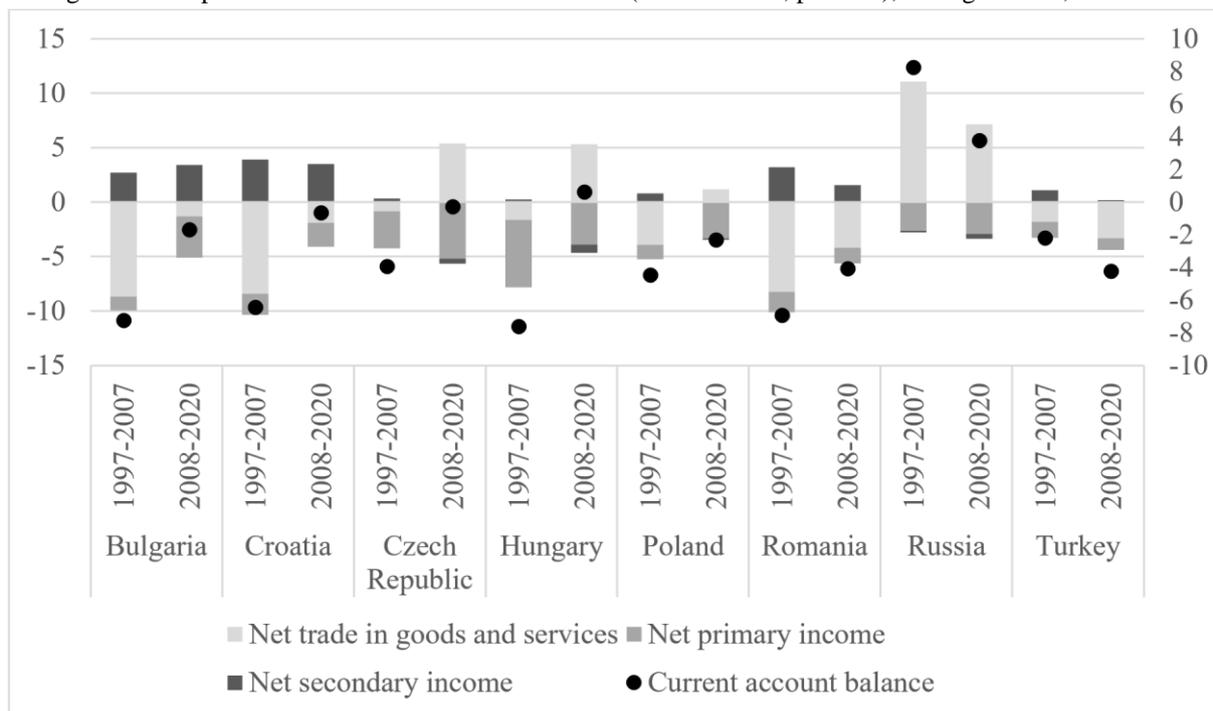
	nominal short-term interest rate		real short-term interest rate	
	2000-2007	2008-2020	2000-2007	2008-2020
Euro area	3.3	0.6	1.1	-0.5
Bulgaria	4.3	2.0	-0.1	0.2
Czech Rep.	3.3	1.2	1.0	-0.5
Croatia	n.a	1.2	n.a	0.3
Hungary	9.2	3.8	2.7	0.6
Poland	8.8	3.0	5.1	1.0
Romania	22.5	4.5	4.1	0.7
Turkey	36.8	11.6	9.4	3.8

Note: ¹3-month money market interest rates. ² Deflator private consumption is used for the calculation of real short-term interest rates. ³ N.a. stands for 'not-available'. Source: Eurostat 2021, author's calculations.

¹ Owing to data unavailability for the external debt of the individual economic sectors for the EEEs, we focus on the two composite indicators: external private debt and external public debt.

The process of capital market liberalization made more funds available for the domestic economic actors in these countries, but it also made their financial systems more vulnerable to capital movements and led to an accumulation of current account deficits. The current account deficits soared in the early 2000s reaching 26 per cent of GDP and 14 per cent of GDP in Bulgaria and Romania in 2007 (World Bank 2021). Not only did the trade balance deteriorate owing to the high growth in imports over exports, but so did the (primary) income balance of the current account. As recipients of large amounts of FDI and portfolio flows, the EEEs saw their primary income deficits rise (Figure 1). Interest payments, dividends, and profit repatriations of international financial and non-financial companies contributed to an increase of the primary income deficits (Kazandziska 2019).

Figure 1: Composition of the current account in EEEs (share of GDP, per cent), average values, 1997-2020



Source: World Bank, 2021.

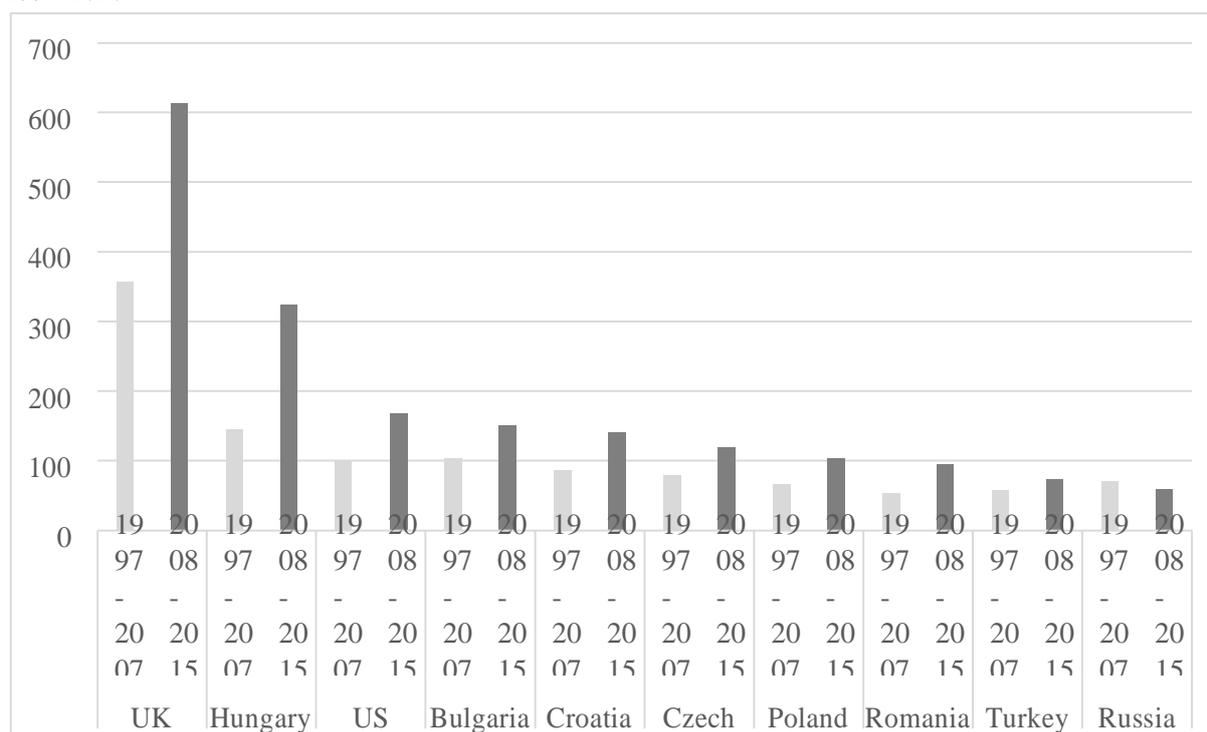
Only after the outbreak of the financial crisis in 2008, did these countries see an improvement of their current account balances. Against the backdrop of high trade openness of the EEEs, exports of these countries slowed down, which meant less funds to finance imports and to service their external debt. At the same time, imports lagged behind exports, which reduced the countries' trade imbalances. In the Polish case, the relatively quick recovery of the German economy, which was the largest importer of Polish products, had a positive impact on the reduction of the trade deficit in Poland. Similar to China and other Asian net-exporters, Russia experienced a fall in its exports owing to a fall in world demand. This decreased its current account surpluses. Turkey is the only country in our sample that saw its current account position deteriorate in the wake of the financial crisis of 2008/09 primarily due to its increase in the trade deficit. The dependency on imported goods for production and the overvaluation of the Turkish lira against the inflation targeting monetary policy strategy seemed to have played a very significant role in the persistence of current account deficits (Yurdakul and Cevher 2015: 93). Moreover, in Hungary, Romania, and Turkey primary income deficits declined in EEEs as net capital inflows slowed down. As a result of the strong decline in the growth of imports and the improvement in the primary income balance, Hungary managed to achieve current account surpluses in the aftermath of the Great Recession. However, this can be interpreted as a 'cyclical surplus' that tends to disappear once the economy starts to recover (Priewe and Herr 2005).

5. Financialization indicators

In this section we will delve into these aspects of financialization: external financial liabilities, degree of financial liberalization, financial system depth, the shift from a ‘bank-based’ towards a ‘market-based’ financial system, the debt of the household, the NFCs, and the government, and their external debt position.

One of the most important drivers of financialization particularly in emerging countries as elaborated earlier is the growth of capital inflows. The stock of total external liabilities as a share of GDP will be used as an indicator for the development of financial inflows. This indicator is provided for the EEEs in Figure 2. The development of this indicator will be compared to the UK and US, as some of the most financialized countries in the world.

Figure 2: Stock of total external liabilities in the EEEs, US and UK (share of GDP, per cent), average values, 1997-2020¹



Note: ¹ Data are available until 2015.

Source: Lane/Milesi-Ferretti 2018.

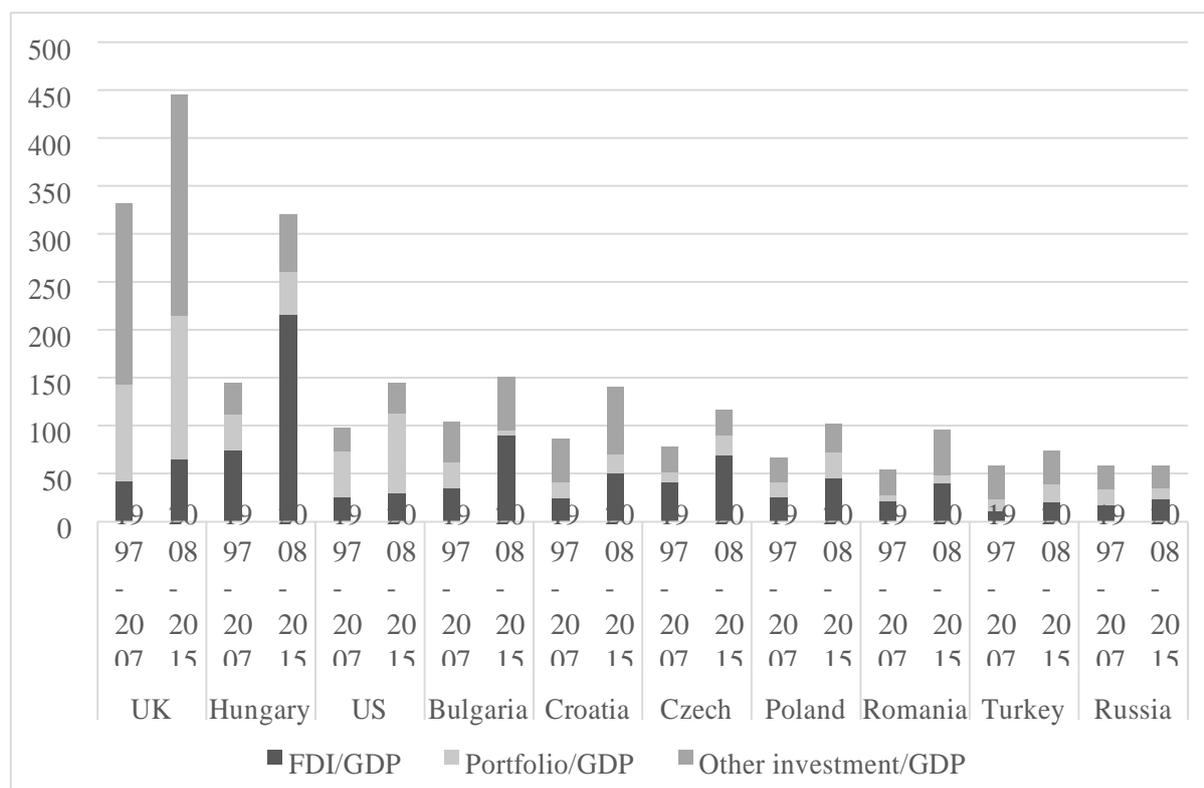
Figure 2 shows that Hungary in particular, experienced strong increase of capital inflows compared to the rest of the EEEs in our sample. The stock of foreign liabilities reached a level of 146 per cent relative to GDP in the decade before the financial crisis of 2008. In the aftermath of the financial crisis, its foreign liabilities increased at a much stronger pace than before, exceeding the 300-per-cent level and thus, getting closer to the UK that had the highest values of this indicator. Although Bulgaria, Croatia, and Czech Republic had a much smaller stock of foreign liabilities than Hungary (or UK) before the outbreak of the financial crisis, they marked a significant rise of their foreign liabilities of about 50 percentage points in the wake of the Great Recession. Russia seems to be the least dependent country on foreign financial flows, reducing its stock of external liabilities to below 60 per cent of GDP in the years succeeding the financial crisis. Turkey experienced strong volatility of capital movements. It is a country where one can clearly spot an example of boom-bust cycles. In the late 1990s, Turkey went through an episode of strong capital inflows (supported by high interest rate policy), which ended in a financial crisis in 2001. Between 2005 and 2007, Turkey attracted large amounts of capital. The government encouraged the development of the bond market and the rise of the stock market trading. After the crisis of 2008, the government supported further the process of securitization and external credit for the

NFCs, that could not list at the stock exchange (Akçay and Güngen 2019). In 2008 and 2009, Turkey had to go through massive capital outflows. This tendency of capital flow fluctuation continued in the decade following the financial crisis of 2008.

One can look at the composition of the financial liabilities to understand the source of financial inflows and the accumulation of liabilities in the EEEs. Figure 3 shows that a few emerging European countries from our sample (Hungary, Czech Republic, and Poland) received capital flows primarily in the form of FDI. The latter was an important driver for economic growth in these countries. In the run up to the financial crisis of 2008, the stock of foreign liabilities in Croatia, Romania, Turkey, Russia, and Bulgaria increased predominantly due to other investment inflows (Figure 3).¹ These countries received a significant part of their capital inflows in the form of interbank loans and trade credit (Bogumil 2014: 2).

Russia is the only net creditor country in our sample. It invests heavily in foreign assets, primarily in foreign exchange reserves. In the late 1990s, amidst the financial crisis, the central bank of Russia introduced a managed floating exchange rate regime. Throughout the early 2000s the central bank intervened strongly in the foreign exchange market to prevent an appreciation of the ruble. At the onset of the financial crisis in 2008, the central bank reduced its purchases of foreign exchange reserves to reduce the depreciation pressure on its currency (BIS 2013: 295).

Figure 3: Composition of the stock of FDI and foreign liabilities in EEEs (share of GDP, per cent), average values, 1997-2020¹



Note: ¹ Data are available until 2015.

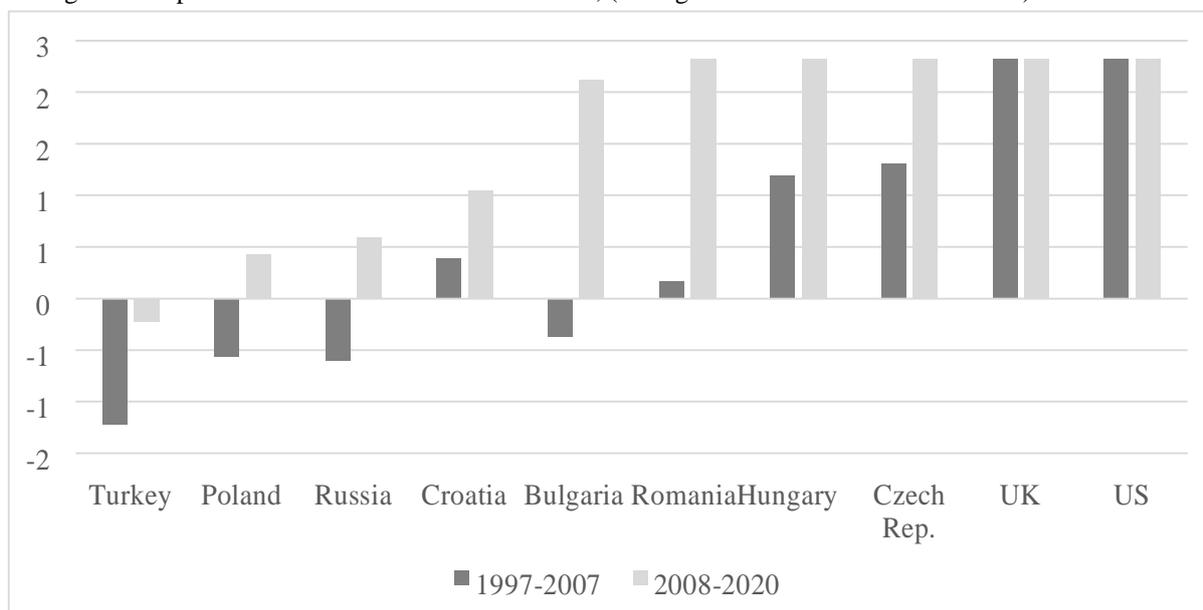
Source: Lane/Milesi-Ferretti 2018.

The next indicator we will look at is the Chinn-Ito index as a proxy for the level of capital account liberalization. Figure 4 shows the capital account openness among the EEEs. Vis-à-vis the Anglo-Saxon countries that already liberalized their capital account to the fullest extent in the 1990s, the EEEs in our sample maintained some capital controls as a remnant of the transition period. The EEEs can be classified in two groups

¹ US and UK saw their foreign liabilities increase owing to portfolio investment and other investment inflows.

depending on the level of capital account openness. On the one hand, there is a group of EEEs that did not fully deregulate their capital account. Turkey, Poland, and Russia are the least financially liberalised countries in our sample. According to the Chinn-Ito database, Poland has the lowest level of capital account liberalization within the EU. On the other side, Romania, Czech Republic, and Hungary went for (at least ‘de-jure’) full capital account liberalization in the decade after the financial crisis.

Figure 4: Capital account liberalization in the EEEs, (average values of the Chinn-Ito index) 1997-2020¹



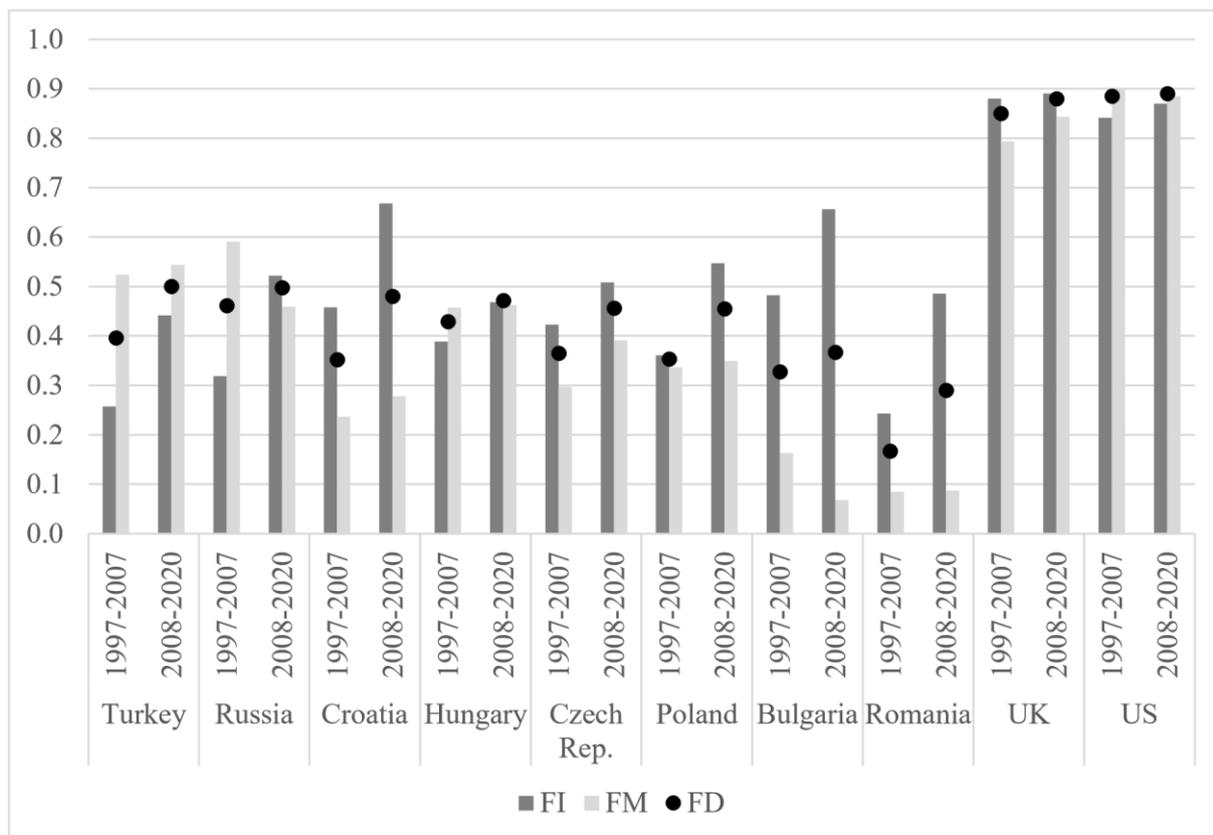
Note: ¹ Data are only available until 2019.

Source: Chinn/Ito 2021.

We will use the indicator ‘financial development index’ from the IMF (2021) as a proxy for the level of financial development of a country. This indicator consists of two elements: financial institutions and financial markets, and captures the depth, efficiency, and access of these two elements.¹ The highest value of the financial development index (as well as its two components – financial institutions and markets), is one, and the lowest is zero. Figure 5 shows that in the aftermath of the financial crisis of 2008 the overall financial development in the EEEs increased compared to the period before. Yet, relative to the UK and the US, the EEEs reached a much lower level of financial development. It is also noteworthy to mention that using this indicator, Russia and Turkey are some of the countries that had a relatively high level of financial development. They had strong development of their financial markets in the late 1990s/early 2000s, but the level of financial market development in Russia dropped at the onset of the Great Recession. Turkey’s financial markets continued to grow when the government actively supported the process of securitization and the deepening of the bond markets in 2009. Before the financial crisis of 2008, Turkey’s financial institutions were relatively poorly developed, but they caught up in the aftermath of the financial crisis. Croatia and Bulgaria also reached a relatively high level of development of their financial institutions. However, these two countries did not necessarily have the same success in terms of developing their financial markets. Romania shows the lowest degree of financial development throughout the whole period of observation.

Figure 5: Financial development index in EEEs, average values, 1997-2020¹²

¹ Visit the website of the Financial Development Index Database of the IMF (2021) for more information on the construction of the index and its components (Financial Development - Story - IMF Data). Financial markets compose predominantly of stock and bond markets, while financial institutions include banks, mutual funds, pension funds, insurance companies, and other non-bank financial institutions.



Note: ¹ FD stands for financial development index, FM – financial markets, and FI – financial institutions. ² Data are only available until 2019.

Source: IMF Financial Development Index Database 2021, author's calculations.

Figure 6 shows the development of market-based in relation to bank-based financial systems. Following Karwowski and Stockhammer (2017), we use the ratio of stock market value traded divided by bank credit (both as a share of GDP) to show the increased role of the capital-markets vs. bank-dominated financial systems. Turkey and Russia show the most prominent shift from the bank-based towards the market-based financial system in the decade prior to the financial crisis in 2008. Using this indicator, these two countries had a stronger shift towards marketbased finance than the UK. The stock market value in Turkey increased almost twice as much as bank credit. In the other EEEs the ratio of stock market value traded relative to bank credit was lower than 1, which means that bank credit remained the most important source of external funds for firms. The stock market in relation to bank credit was the lowest in Croatia and Romania. It is noteworthy to mention that in all the EEEs, bank credit regained its importance in the years following the Great Recession.

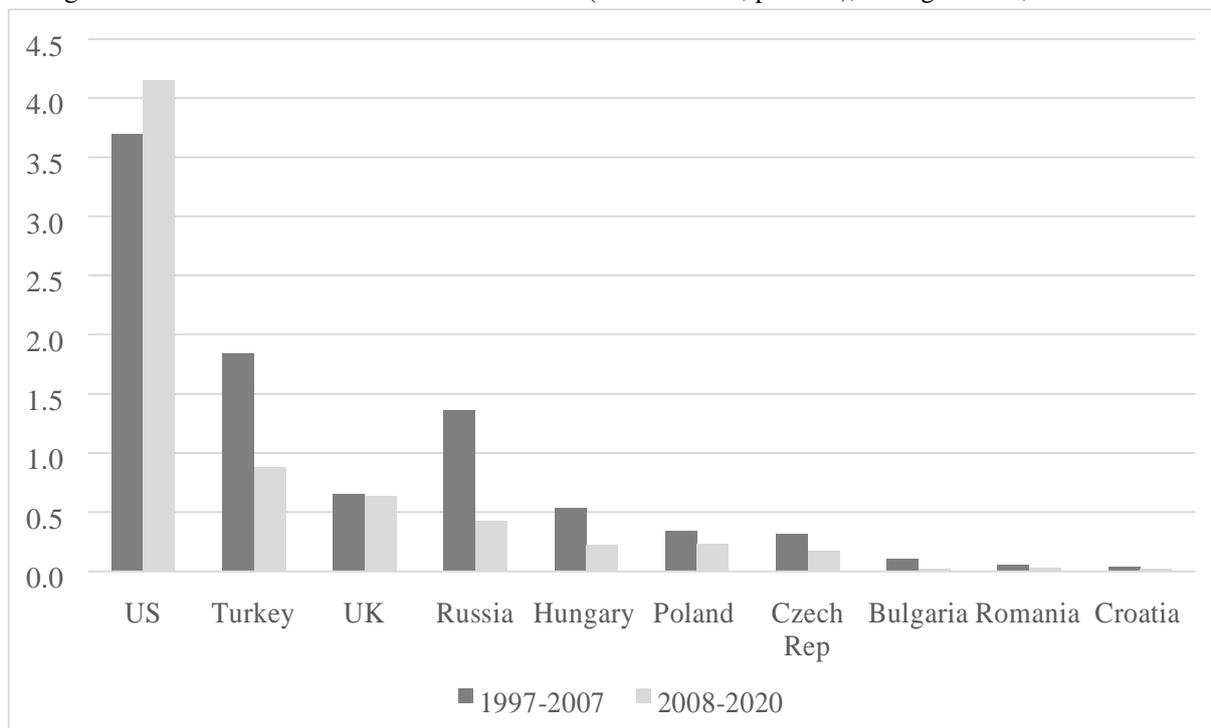
The fall in nominal and real interest rates in the early-2000s encouraged borrowing of the private sector in the emerging countries of our sample. Figure 7 shows the level of debt of nonfinancial corporations. Non-financial corporations (NFCs) debt-to-GDP ratio will be used as a proxy of financial distress of firms. The data for this indicator are retrieved from the Bank for International Settlements (BIS). This database unfortunately does not contain data on NFC debt for Croatia, Bulgaria, and Romania; therefore, Figure 7 does not include these countries.¹

Before the Great Recession, Czech Republic had the highest level of NFCs debt with an average value of slightly less than 60 per cent, followed by Hungary with an average value of 55 per cent. During the same period, the NFCs in Russia were the least indebted according to this indicator. After the outbreak of the financial

¹ The Eurostat database could be also used to obtain data for NFCs debt. However, this database lacks data on the UK and the US. Furthermore, data on NFCs' debt diverge (for some countries of our sample) significantly from the BIS database, which is more commonly used in the financialization literature. Therefore, we decided to use the BIS database instead, for the debt of NFCs, governments, and households.

crisis in 2008, the NFCs in EEEs increased their debt relative to GDP. In Czech Republic, however, they switched towards deleveraging.

Figure 6: ‘Market-based vs. bank-based’ indicator (share of GDP, per cent), average values, 1997-2020



Source: World Bank 2021, authors calculations.

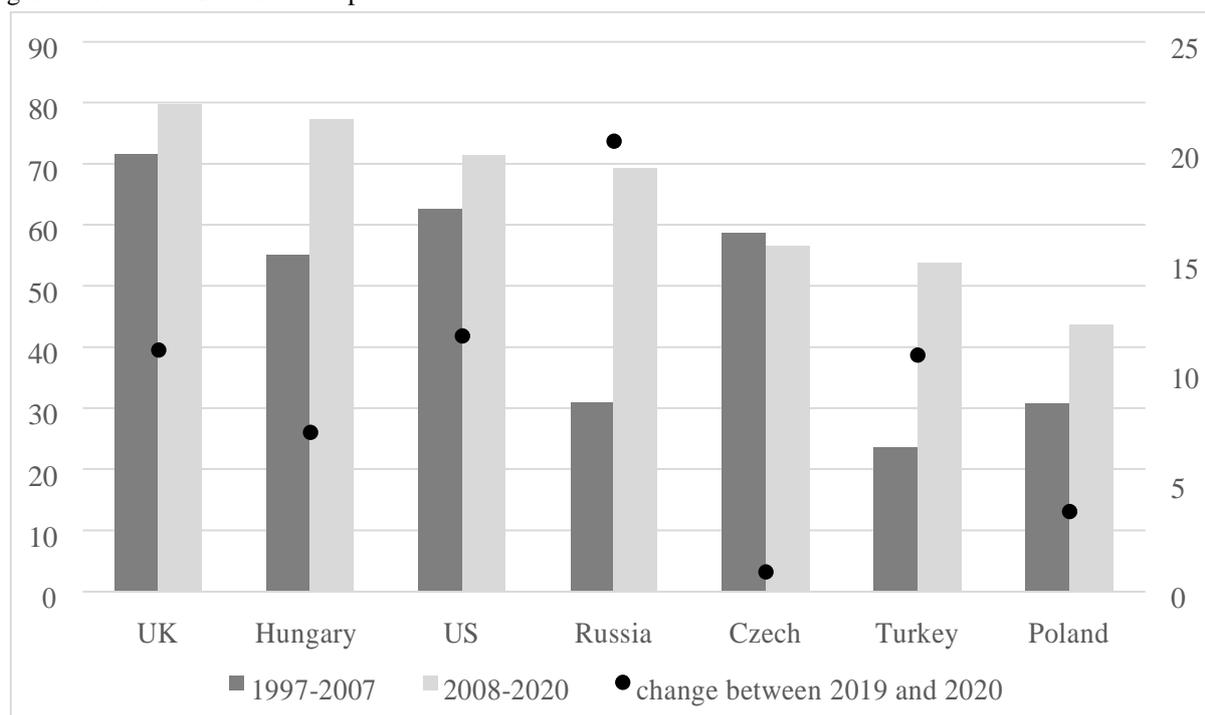
Compared to the two Anglo-Saxon countries, we can argue that the NFCs in EEEs had lower debt as a share of GDP.

However, looking more closely one can observe that EEEs marked a strong increase of their NFCs debt-to-GDP ratios relative to the Anglo-Saxon countries. For example, the NFCs in Russia had initially a low level of debt of about 30 per cent on average between 1997 and 2007. However, the NFCs debt rose by more than 120 per cent to a level of 69 per cent in the second period of analysis (2008-2020). Similar dynamics of growth could be identified for Turkey.

The NFCs became strongly affected by the Covid-pandemic, particularly in the tourism, travel, accommodation, and retail sectors. The debt of the NFCs in 2020 rose to the largest extent in Russia and to the smallest extent in the Czech Republic (Figure 7).

Public debt-to-GDP is the next indicator we will analyse. In the decade succeeding the financial crisis in 2008 the governments in Turkey and Russia managed to reduce their public debts relative to GDP, whereas public debt continued to rise in Poland, Czech Republic, and Hungary (Figure 8). The Covid-pandemic led to serious collapses of the economies in emerging countries also in Europe. The governments in EEEs increased their borrowing with public debt-to-GDP ratios increasing manyfold. For instance, in Russia the public debt to GDP ratio rose by almost 40 per cent between 2019 and 2020. The rest of the EEEs (led by Poland and Czech Republic) also saw their public debt-to-GDP ratios increase substantially. Relative to UK, government debt-to-GDP in EEEs increased at a larger pace during the Covid-pandemic.

Figure 7: Level of debt of non-financial corporations (NFCs) (as a share of GDP, in per cent), and the growth of the NFCs debt in the pandemic



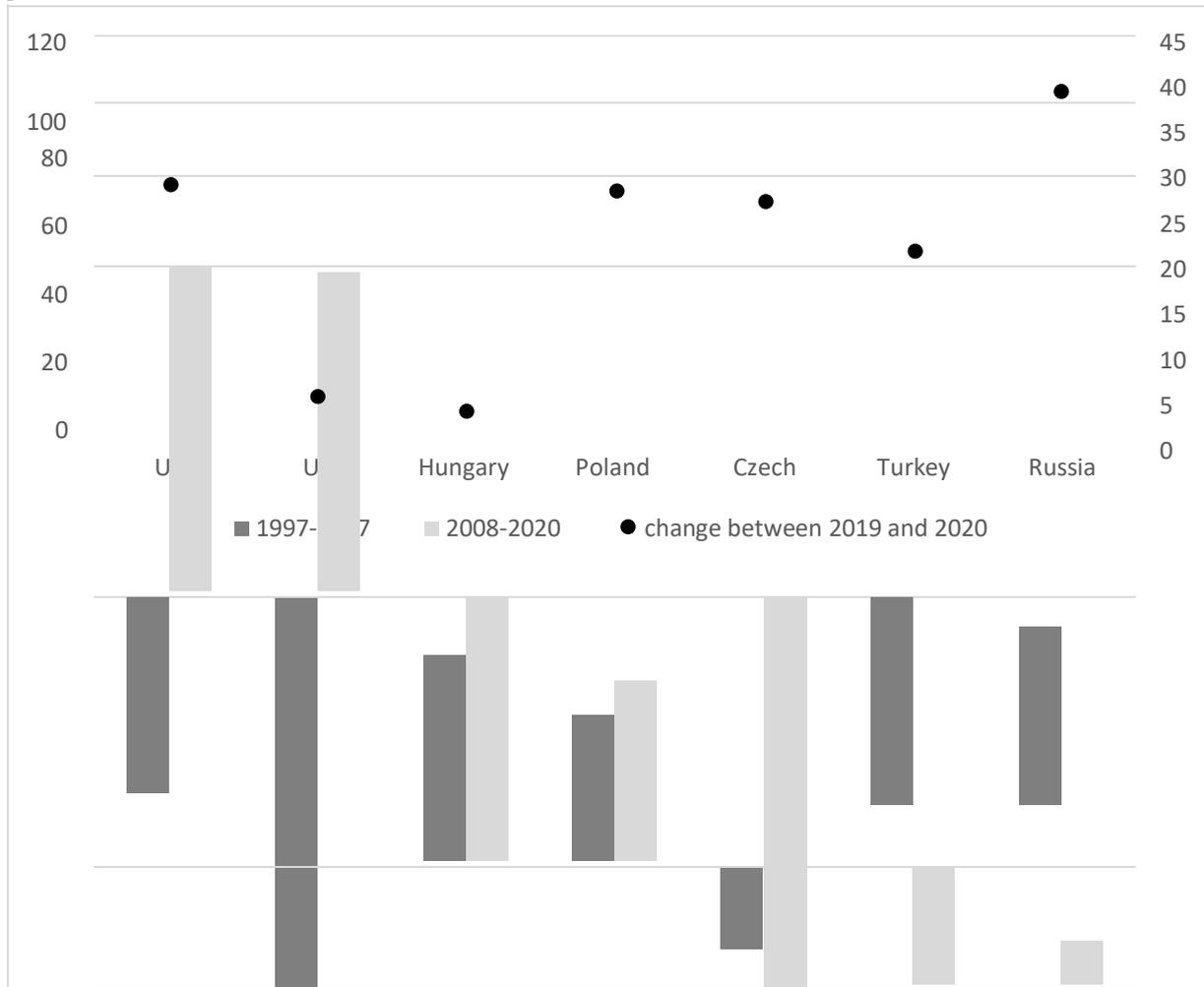
Note: The averages (1997-2007 and 2008-2020) for the NFCs debt-to-GDP ratio are indicated on the left y-axis, while the percentage change in the indicator between 2020 and 2019 is shown on the right y-axis.

Source: BIS 2021, author's calculations.

Households increased their appetite for borrowing as well. Households have become involved in the financialization process of EEEs through the privatization of the health insurance system, as well as the (at least partial) privatization of the pension system, and increasingly through real-estate and stock purchases (Lapavistas 2009b).

Figure 9 shows the level of households' debt measured as a ratio of household debt-to-GDP. Relative to the households in the Anglo-Saxon countries, their counterparts in the EEEs were less indebted. Russia, followed by Turkey, had the lowest household debt-to-GDP ratio. Using this indicator, we can argue that the households in EEEs were less exposed to financialization than the Anglo-Saxon countries, whose household debt-to-GDP ratio ranged between 70 and 80 per cent on average before the financial crisis. However, we can also spot a tendency of a rise of households' indebtedness in the years following the Great Recession. The household-to-GDP ratio in Poland reached the highest level of around 34 per cent.

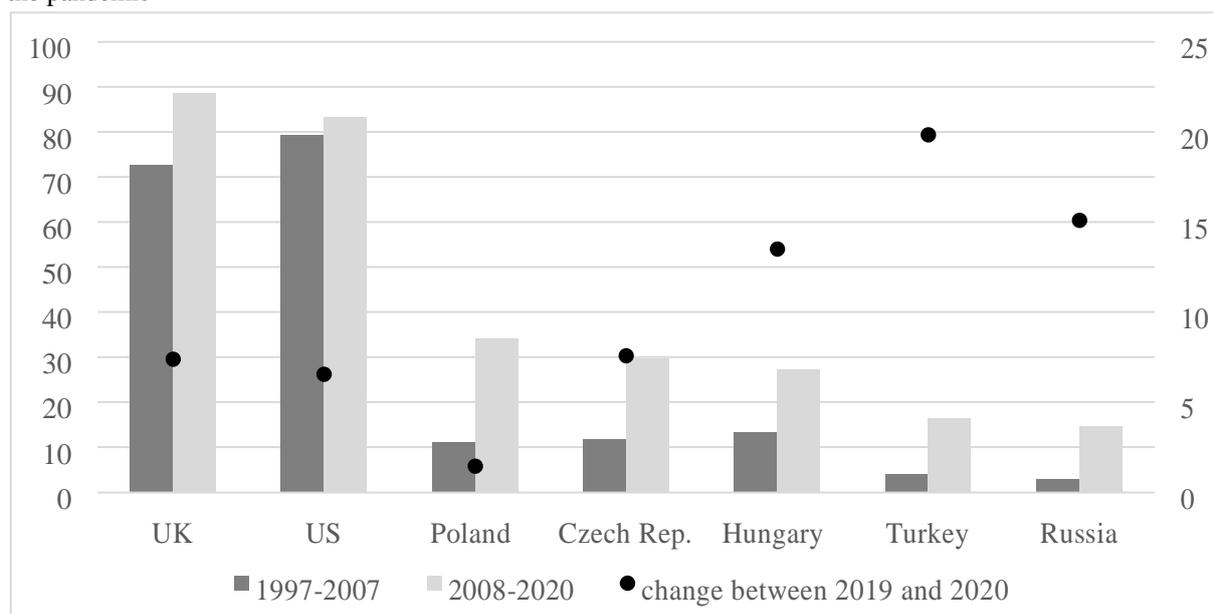
Figure 8: Level of public debt (as a share of GDP, in per cent), and the growth of public debt in the pandemic



Note: The averages (1997-2007 and 2008-2020) for the public debt-to-GDP ratio are indicated on the left y-axis, while the percentage change in the indicator between 2020 and 2019 is shown on the right y-axis.

Source: BIS 2021, author's calculations.

Figure 9: Level of household debt (as a share of GDP, in per cent) and the growth of the household debt in the pandemic



Note: The averages (1997-2007 and 2008-2020) for the household debt-to-GDP ratio are indicated on the left y-axis, while the percentage change in the indicator between 2020 and 2019 is shown on the right y-axis.

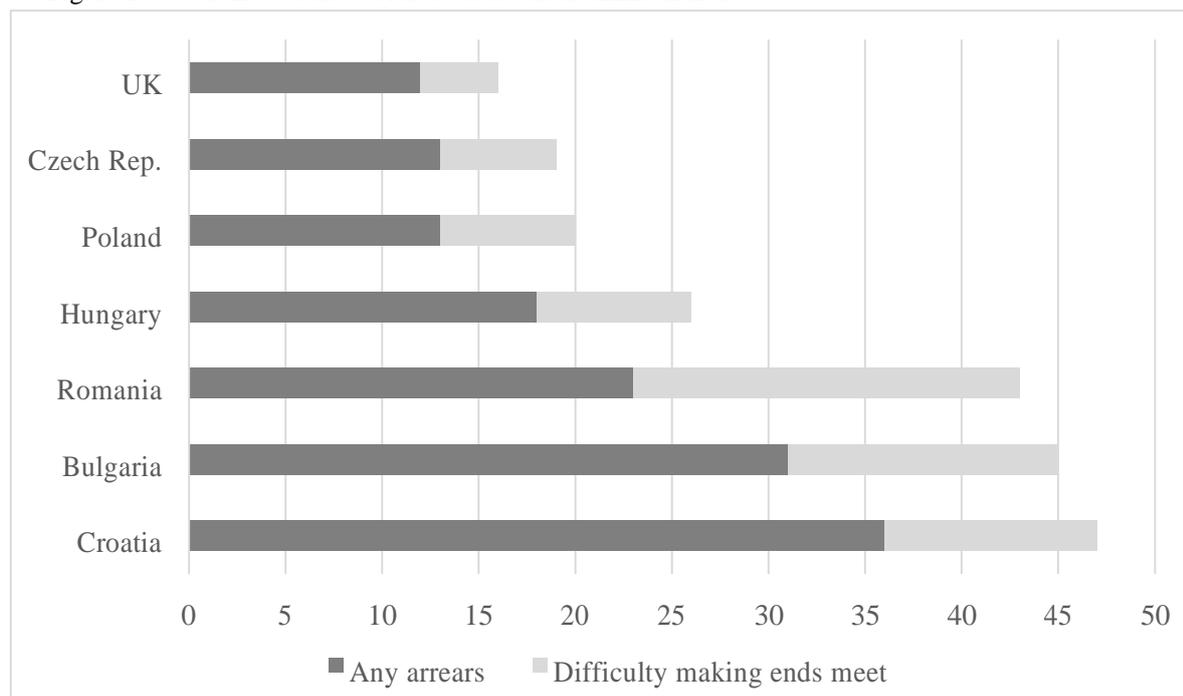
Source: BIS 2021, author's calculations.

EEEs started off from rather low levels of household debt. The household debt-to-GDP ratio in Russia was less than 1 per cent in 1998 and increased to 10 per cent in 2007 (BIS 2021). But the growth dynamics of household indebtedness were spectacular. Among the EEEs of our sample, Russia and Turkey marked the strongest increase of household debt relative to GDP (the household debt-to-GDP ratio rose by more than 300 per cent in these two countries in the aftermath of the financial crisis). Hence, even though the level of household debt relative to GDP in the EEEs was lower than in the UK and the US, the increase of household debt as a share of GDP in EEEs was much stronger than in the Anglo-Saxon countries.

During the Covid-pandemic, all the EEEs, except Poland experienced rise of the household debt-GDP ratio. In the first half of 2020 households were hesitant to consume as many countries were in a lockdown; hence, the household debt-to-GDP increased only slightly in the first quarter of 2020 (BIS 2021). However, in the second half of 2020, household debt started picking up. Low-income households were severely affected by the Covid-pandemic because they saw their incomes being reduced. They had to accept reduction of their working hours, were put on furlough, or lost their jobs (especially those working in the accommodation, tourism, gastronomy, or the retail sector). The borrowing of the low-income households picked up in the Covid-pandemic to cover the costs of food or rent because these households did not have sufficient savings to weather even temporary losses of their income (Francis-Devine 2021: 13).¹ The households in Turkey and Russia experienced rise in their debt-to-income levels of 20 per cent and 15 per cent respectively (Figure 9).

¹ Poland did not see its household debt-to-GDP ratio rise. This is due to the fact that Poles are rather conservative towards consumption even during economic boom; hence, they largely resorted to depleting their savings in 2020 and 2021 (Szustak, Gradon, and Szweczyk 2021: 12). Between December 2019 and December 2020, the household debt-to-GDP ratio in Poland increased only by 1.5 per cent.

Figure 10: Over-indebtedness of households in the EEEs in 2016¹



Note: ¹Proportion of people aged 18+ at risk of over-indebtedness. ‘Any arrears’ means payment delay because of incapability of payment on time (for instance, delay in payment of rent or mortgage, utility or telephone bills, rent, etc, but also repayment of any household credit, including credit card overdrafts) (Eurofound 2020: 10). ‘Difficulty making ends meet’ shows the share of people, who reported to have difficulty making ends meet with their current income. Data for Russia and Turkey are not available

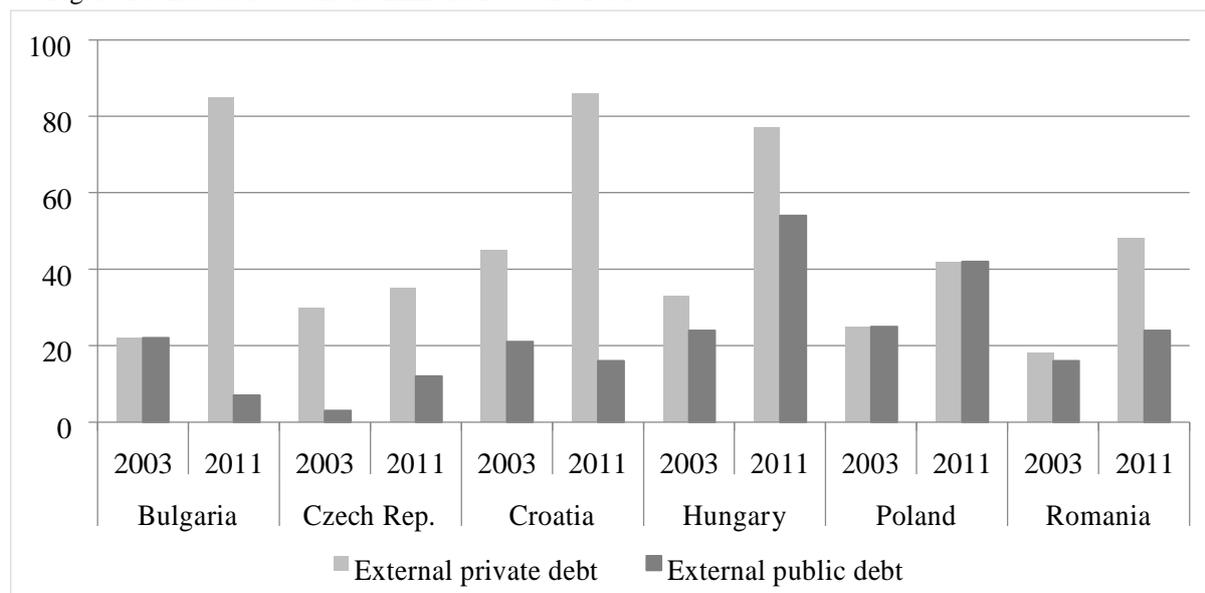
Source: Eurofound 2020: 10.

Albeit the level of indebtedness of households in EEEs is relatively low (compared to the UK and the US), the risk of over-indebtedness is quite substantial (Figure 10). For illustration, 36 per cent of the households in Croatia in 2016 were at risk of over-indebtedness, followed by Bulgaria (31 per cent) (Figure 10). According to Eurofound (2020), households are considered at risk of over-indebtedness, if in the past 12 months they were not able to make scheduled payments for rent, mortgage payments, payments for consumer loans, informal loans (taken from friends), utility or telephone/internet bills. Between 14 and 20 per cent of the households

in Romania and Bulgaria made ‘ends meet’ with difficulty. Hence, even though financialization in EEEs is at a lower level compared to the UK, the risk of over-indebtedness in the former is significantly higher compared to the latter.

It is noteworthy to also take a closer look at the composition of debt of the economic sectors. Against the background of relatively weak or unstable domestic financial systems, firms in EEEs relied on external funds to finance investment and production. In the cases where the external finance predominantly finances the export sector, the danger of a currency mismatch could be minimized. However, if the domestic financial system does not properly function, and the domestic currency cannot fulfil all the functions of money, then the problem of a currency mismatch elevates. When capital inflows are suddenly reversed, the whole financial system can collapse. To address these concerns, we will explore the external private, and the external public debt. External debt of the private sector rose in all EEEs in the decade after the Great Recession (Figure 11). Overall, Croatia and Bulgaria, followed by Hungary had the highest external private debt as a share of GDP. In the years following the financial crisis of 2008, external debt of the public sector rose in the majority of the countries, and it declined in Bulgaria and Croatia (Figure 11).

Figure 11: External debt in the EEEs in 2003 and 2011¹



Note: External private debt includes debt of the households, financial and non-financial companies, banks, as well as inter-company loans. External public debt includes the debt of the government, and the central bank. All data are presented as a share of GDP (in percent). Data for Russia, Turkey, UK, and US are not available.

Source: Giday 2013, Tables 7, 10.

In the context of external debt, we should mention that emerging countries face the problem of the ‘original sin’, i.e, the restricted ability to borrow abroad in a domestic currency. Eichengreen and Hausmann (2005: 3) explained that

(...) the composition of external debt – and specifically the extent to which that debt is denominated in foreign currency – is a key determinant of the stability of output, the volatility of capital flows, the management of exchange rates, and the level of country credit ratings.

Thus, in addition to external debt ratios, it is of key importance to analyse the currency denomination of external debt to capture more closely the potential risk of dollarisation and currency mismatch. In the EEEs foreign-currency-denominated debt constitutes the bulk of the gross external debt. In 2021 between 60 and 96 percent of the total gross external debt was denominated in a foreign currency in these countries (Table 2). The only exception is Czech Republic, where 52 percent of the external debt had domestic currency denomination. This implies that

Table 2: Composition of external debt: foreign vs. domestic currency denominated debt in 2021

	Foreign currency debt (share of external debt, %)	Domestic currency debt (share of external debt, %)
Bulgaria	96	4
Croatia	93	7
Czech Republic	48	52
Hungary	84	16
Poland	66	34
Romania	86	14
Russia	72	28

Turkey	95	5
United States	8	92

Source: World Bank, 2022.

We have created Table 3 as a summary of the results of the financialization analysis in the EEEs. The ranking in this table ranges between ‘high’, ‘medium high’, ‘medium low’ and ‘low’ to express the level of financialization dynamics using the selected indicators. The data used for the indicators have been sorted in quartiles for the country averages in the periods 1997-2007, and 2008-2020. Thus, the numbers in the table show the ranking of a country relative to the countries selected in this paper. We should also be aware of the fact that the results presented in Table 3 are static and do not capture the dynamics of capital flow movement (like in the case of Turkey) or the dynamics of growing debt levels that were very pronounced in the EEEs.

From Table 3 it can be argued that the level of foreign indebtedness created through capital inflows was the most pronounced in Hungary, the UK, and the US, followed by Bulgaria and Croatia. Romania and Russia are the least dependent countries on foreign finance within our sample. Czech Republic, Hungary, UK, US, (and since the last decade also Romania) have characteristics of high capital account liberalization, whereas Russia, Turkey, and Poland have maintained their capital controls.

The depth of the financial system reached a high level in Russia, Turkey, and Hungary. In these countries one can also spot a shift from a bank-based to a market-based finance. Bulgaria and Romania seem to have the weakest financial system institutions and markets within our sample.

Rising NFCs’ debt levels in the period following the Great Recession can be spotted in Hungary and Russia. In Poland, households had to struggle with increasing debt levels. The debt-to GDP ratio in the UK and the US has been remarkable in all three economic sectors. The economic sectors in Russia and Turkey seem to be the least indebted, but we should keep in mind that the analysis of the paper showed that these two countries exercised the strongest growth dynamics of household and NFCs debt. The external debt was high in Bulgaria, Croatia, and Hungary, and relatively low in Czech Republic.

Table 3: Summary of the financialization indicators, average values, 1997-2020¹

	External financial debt	Financial liber.	Financial system depth	MB financial system ³	Household debt	NFCs debt	Gov. debt	Ext.debt priv.(public) ⁴
Bulgaria	high med. high	med. low med. low	low low	low low	2			low (med. high) high (low)
Croatia	med. high med. high	med. high med. low	med. low med. high	low low				high (med. low) high (med. low)
Czech Rep.	med. low med. low	high high	med. low med. low	med. low med. low	med. low med. low	med. high med. low	low med. low	med. high (low) low (low)
Hungary	high high	med. high high	med. high med. high	med. high med. low	med. high med. low	med. high high	high med. high	high (high) med. high (high)
Poland	low med. low	med. low low	med. low med. low	med. low med. high	med. low med. high	low low	med. low med. low	med. low (high) low (high)
Romania	low low	low high	low low	low low				low (low) med. low (med. high)
Russia	med. low low	low low	high med. high	high med. high	low low	low med. high	med. low low	
Turkey	low low	low low	med. high high	high high	low low	low low	high low	
UK	high high	high high	high high	med. high high	high high	high high		
US	med. high high	high high	high high	high high	high high	high med. high		

Note: ¹ The left triangles in the cells represent the quartiles in the period 1997-2007, while the right triangles – the period 2008-2020. ² The empty cells mean that no data was available for the given countries. ³ MB stands for market-based financial system. This indicator represents the shift from bank-based towards market-based financial systems. ⁴ Data on external public debt is presented in brackets.

6. Types of financialization in the EEEs

Financialization in the emerging European countries (Hungary, Croatia, Bulgaria, and to a lesser extent, in Poland, and Czech Republic) has been determined by foreign capital inflows (Figure 2). The foreign ownership among banks in the EEEs increased substantially between the late 1990s and 2000s. Through the process of privatization, foreign banks (mainly Western European) increased their presence in Central Eastern Europe both through their subsidiaries and by cross-border loans (Bubbico et al. 2017). We can observe an increased share of foreign banks in the banking sector of these countries. The share of foreign-owned banks in the total number of banks ranged from only 9 per cent in Russia, and 49 per cent in Turkey to over 60 per cent in Hungary, Bulgaria, Poland and Romania in 2008 (EBRD 2009). In the EEEs, except Russia and Turkey, the foreign banks have also owned the majority of assets in the banking sector (over 70 per cent in 2008).¹ As Berglöf and Bolton (2001) argue, by the end-1990s the financial systems were characterized by primarily foreign-owned commercial banks, which gave credit predominantly to the government. Companies at the time, received the bulk of the finance from their retained earnings.

From 2000s on there has been strong credit creation towards the private sector, whereby the borrowing dynamics of households in the EEEs seem to have been particularly pronounced. Foreign banks in Poland, as well as the other EEEs of our sample (excluding Russia) were the main providers of credit to the private sector. We can call this type of financialization ‘foreignfinance-led’. To a large extent denominated in a foreign currency (the Euro or the Swiss franc), the increase in debt led to financial distress of the households that had to take over the exchange rate risk of the foreign-currency debt (Bohle 2014). Mortgages denominated in a foreign currency were particularly attractive because they offered lower interest rates, less stringent assessment criteria, and had longer duration than mortgages in a domestic currency (Büdenbender and Lagna 2019).

Financialization in Russia, however, was not primarily driven by foreign capital inflows. Big role in the process of financialization has been played by the government. We can call this type of financialization ‘state-led’ financialization. Let us elaborate on the Russian state-led financialization in more details.

Already in the mid-1990s there were recommendations by the IMF and the World Bank within the Washington Consensus policy package for Russia to follow the path of deregulation (Gilman 2010: 262–3). In 1997 and 1998 the capital account Russia started liberalizing the capital account, but only partially and primarily in the sphere of short-term government bonds, which was transitory because of the financial crisis that hit Russia in 1998. In the 2000s and especially between 2006 and 2008 Russia experienced strong increase in securitization. Nevertheless, as the global financial crisis of 2008/09 started spreading over the Russian territory, the government turned towards a policy of re-nationalisation of banks, which could be interpreted as a:

(...) shift away from strengthening market institutions towards heavier government intervention. Aven (2015: 37)

The process of re-nationalization of banks was accelerated in 2014 as a result of the conflict that arose between Russia and Ukraine, when the former annexed Crimea.

The financial sector in Russia is highly dominated by the government and the Central Bank of Russian Federation (CBR). Hence, CBR has a dual role of a regulator and a partial owner of shares in the banking system in Russia (BER 2021). Commercial banks play an important role of accumulators of foreign currency through export revenues of their corporate clients, which the central bank needs for its foreign exchange reserves. Through commercial banks, the central bank and the government are involved in the allocation of credit, which can be politically motivated (Büdenbender and Lagna 2019).

Between the central bank and commercial banks there is one more important pillar in the banking system, which are the state-owned banks. Similar to China, state-owned banks make the bulk of the Russian banking

¹ In Hungary, Bulgaria, Czech Republic, Croatia and Romania, foreign-bank assets made more than 80 per cent of total bank assets (EBRD 2009).

system (Sutela 2012: 168–77). Over 55 per cent of the assets in the banking sector in 2019 belonged to the four largest state-owned banks (Sberbank, Gazprombank, VTB, and Rosselkhozbank). Assets of the state-owned banks in total made up over 65 per cent of the total banking sector assets (Bofit 2019). The largest state-owned banks are also the first ones that receive financial assistance from the government in times of crisis.

They act as agents of the monetary authorities in supplying credit, channelling liquidity into the system, bailing out weaker institutions, setting a politically desirable price level for loans and deposits, and supporting the money exchange and even the stock market. (Vernikov 2012: 257).

Overall, in the years of economic expansion, which are strongly correlated to oil price increases and rise in export surpluses, the government accumulates substantial foreign exchange reserves that are then used to bail out large private companies via state-owned banks (Viktorov and Abramov 2015).

Another important mechanism through which the government is involved in the process of financialization is through the state-owned Agency for Housing Mortgage Lending (AHML). In times of crisis AHML bought mortgage-backed securities and covered banks from commercial banks to ‘free up their accounts’ (Büdenbender and Lagna 2019: 112). Moreover, AHML has served as a vehicle for social policy for the government through which it gave preferential housing loans to socially vulnerable groups.

Other agents through which the government is involved in the process of financialization in Russia are Vneshekonombank (the state development bank), ASV (the deposit insurance agency) and various state-owned companies that were in charge of rescuing failed private banks after 2008 and 2014, using government funds (Vernikov 2012).

7. Conclusions

In this paper we analysed the dynamics of financialization in selected countries in emerging Europe and compared them with the developments in the Anglo-Saxon countries as some of the most financialized countries worldwide. The focus of this paper was on the decade before and the years after the financial crisis of 2008, including the latest course of events caused by the Corona-pandemic.

After providing an overview of the financialization literature related to emerging countries, the paper looked into some of the most important factors that contributed to the spread of financialization in the EEEs. During the transition period, these countries adopted trade liberalisation, and financial account liberalization policies, as a result of which foreign financial flows rose and so did the entrance of foreign banks in these countries. It was found that EEEs particularly Hungary, Bulgaria, Croatia, and to a lower extent, Czech Republic and Poland experienced strong financial inflows and an accumulation of foreign liabilities. In the late 1990s Turkey was given as an example of boom-bust cycles and high volatility of capital flows, with episodes of high capital inflows that increased the vulnerability of its financial system, caused an appreciation of the currency, and resulted in financial crises. Russia was relatively less exposed to foreign finance. In Russia the government is an important factor for the development of financialization either in a direct (as a majority shareholder) or in an indirect way (banks controlled by state-owned companies and banks).

One can say that financialization in EEEs developed in a heterogenous way. There is a difference between countries in terms of the intensity of financialization dynamics portrayed through the financialization indicators. As a whole, the financialization in the EEEs was less intensive than in the Anglo-Saxon countries. However, the debt dynamics of the EEEs were more pronounced than in the latter, which raise concern about the fragility of their financial systems, particularly amidst the Covid-pandemic, when the households, the NFCs, and the governments saw their debt-to-GDP ratios rise. Government debt in particular increased strongly in 2020 and 2021 as a result of the rising expenditures and reduced public revenues. Hence, even though the level of debt relative to GDP has been low compared with the UK or the US, the debt dynamics over time need to be carefully approached and monitored. The level of external debt of the EEEs is important to be considered as well. Their external debt is increasing and is primarily denominated in a foreign currency, which increases the danger of currency mismatch and financial crises.

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Growth Mindset: Key Factor for Developing Citizens

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Abstract

Mindset is one of the approaches to developing the human potential that is gaining attention. Both in education, health, and business circles because the conceptual theory can be applied to develop the potential to be successful and live in society smoothly and happily. A growing mindset starts with wondering why some students get excited about complex problems while others worry. Professor Dweck observed that some children believe that people are born with limited intelligence that cannot be changed (fixed mindset). In contrast, others think that intelligence can be adapted and can be grown and raised with practice (growth mindset).

This concept extends from the classroom to athletics, conflict resolution, relationships, and career management. Therefore, the growth mindset has been defined as the belief that people's skills and abilities can be developed accordingly. So, it may be time for all adults, from policymakers, juvenile workers, teachers, and families, to understand the nature of children. If we still insist that children are the nation's future, we need to allow them to design their lives, trial and error, build their self-worth, and develop their potential according to their interests. Allowing them to participate in all aspects and jointly designing the society in which they live to be better than the present. To start developing a Growth Mindset, we need to know the level of Growth Mindset of each person first to know the development of each person. Therefore, it is necessary to study and develop the Growth Mindset indicator to carry out the development of the right person to the right point. So, we must go back and look at developing children and youth, how we create children with what kind of mindset and by which way of starting from what kind of frame of mind. This article aims to present the results of the study and development of Growth Mindset Indicators, which can be used to create a Growth Mindset measuring tool to diagnose the level of Growth Mindset of each person, which is information in thinking. Find a way to develop the Growth Mindset to be effective and efficient so that children have a higher potential to live happily in society and become a vital force in the country's future development.

Keywords: Growth Mindset, human resource, Citizens Development, 21'st century skill, soft skill.

Introduction

A mindset is a person's conviction in their own abilities, intelligence, and personality. When a person is confronted with a circumstance, events are processed and communicated in response by building a conceptual framework within which they prevail, determining the individual's motives and other characteristics. For example, having distinct explicit goals results in unequal potential development. As a result, varied degrees of success are achieved. (Blackwell, Trzesniewski, & Dweck, 2007; Dweck, 2006)

Dweck proposed an implicit theory in her early investigations that splits beliefs into two categories: the idea that one's intelligence or ability can be changed (Incremental theory) and the belief that one's intelligence or ability cannot be changed (Entity theory). (Blackwell, Trzesniewski, & Dweck, 2007; Dweck, Chiu, & Hong, 1995).

Subsequently, Dweck established the notion of mindset, dividing it into 1) growth mindset and 2) fixed mindset, which describes the belief that It influences behavior differently (Dweck, 2006). A growth mindset is a belief that an individual's intelligence, skills, abilities, and personality can be altered and developed. Allow persons with this mindset to constantly seek possibilities for self-improvement (Dweck, 2006; Murphy & Dweck, 2015). The growth mindset leads to motivation and can be achieved via work, learning, and practice. Whereas the fixed mindset is a belief in one's characteristics and attributes that cannot be changed or developed, or if it develops, it does so early in life since potentials or abilities are the product of genetics or natural abilities (Dweck, 2006).

Although the growth mindset and the limited mindset are different beliefs, however, it was found that individuals can have different conceptual frameworks for their traits or attributes (Dweck, Chiu, & Hong, 1995; Dweck, 2006; Yeager & Dweck, 2012). In other words, someone may have a growth mindset about intelligence but may have a fixed mindset about their personality or musical skills. Individuals with different mindsets have many different attributes, such as learning styles, life goals, their behavior when faced with challenging situations or problems, and their reactions to failures. The difference in response to these things will affect self-development leading to success in various fields such as study, work, and individual life that is different. different (Esparza et al., 2014; Lee et al., 2012; Mangels et al., 2006; Miele, Son, & Metcalfe, 2013; Yan, Thai, & Bjork, 2014; Chanita Rungrueng and Seree Chadcham, 2016)

The Growth Mindset is the belief that human beings can change and develop their characteristics and attributes. It is crucial and necessary that individuals with a growth mindset tend to focus on the pursuit of new ideas and the effort and training themselves to be successful in their learning (Chan, 2012; O'Rourke, 2014). Whereas individuals with a fixed mindset tend to believe that effort reflects their inability because competent individuals do not need the effort to do things (Chan, 2012; Lee et al., 2012). Consequently, people with a fixed mindset tend to avoid making efforts to manage or solve problems (Lee et al., 2012) and are anxious about proving their good qualities. Is it enough, or how capable is it (Lee et al., 2012; Mangels et al., 2006; Murphy & Dweck, 2015). Unlike those with a growth mindset who are not worried about these images (Murphy & Dweck, 2015).

So, it may be time for all adults, from policymakers, youth workers, teachers, and families, to understand the nature of children; if we still insist that children are the future of the nation, that means we must open. Opportunities for them to design their life, trial, and error, build them to see their own worth, and develop their potential under their interests, helping them have the life and career skills they need. Participate in all aspects, such as expressing political opinions and co-designing a society in which they live that is superior to the current one, which requires us to reflect on how to grow children and youth so that we produce children who are capable of making positive contributions to society. What kind of mindset does it have, and what approach did it use to get there?

This research aims to investigate and produce growth mindset indicators, which will be an essential tool that every organization can use to study Growth Mindset or construct measurement tools to gather information to develop innovative educational models to promote children's growth mindset, resulting in children having greater potential, being able to live happily in society, and being an essential force in the country's future development.

Methodology

Determination of growth mindset indicators by examining the theoretical concepts from linked papers and research in order to define the indicator framework and employing the critical incident technique to obtain the Growth indicator is as follows:

The target group is educational personnel who have the knowledge, ability, and experience in education management, child and youth development, and child psychologists, totaling 30 people.

The research instrument was a Critical Incident Technique questionnaire, which was open-ended, and consisted of 3 questions: the first question was the definition of a Growth Mindset. The second question was, how was the Growth Mindset of Thai children? Furthermore, the third question was What is the Fixed Mindset of Thai children?

Results

From the analysis of questionnaires using the critical incident technique to review critical incidents related to the Growth Mindset of Thai children, the researchers synthesized to create a growth mindset indicator of Thai children by grouping the related issues, as well as the data obtained from the synthesis of relevant domestic and international research papers.

Growth Mindset indicator

1. Effort and self-training to meet the benchmark

2. Seeking Challenges
3. Failure growth, feedback seeking, problem solving and learning review.
4. Building Confidence and Self-Discovery
5. Relationship building and impact on self and community

The researchers synthesized the results of the responses to the questions in the critical incident technique step. We obtained a table of characteristics or behaviors of children with growth and fixed mindsets. Some examples are shown in Table 1.

Table 1 Growth mindset indicators of Thai children

Characteristics of people with a growing mindset	Characteristics of people with a fixed mindset	indicators
<ul style="list-style-type: none"> • Have faith and have clear goals • respect for laws and differences • be able to integrate knowledge across sciences • etc 	<ul style="list-style-type: none"> • not interested in learning • There is a fixed answer to life. • familiar with traditional practices • etc 	1. Effort and self-training to meet the benchmark
<ul style="list-style-type: none"> • Likes to learn new things. • Eager to learn new things. • Never give up on failure. • etc 	<ul style="list-style-type: none"> • Do not like to learn new things. • Avoid challenging events or new experiences that come into life • lack of self-confidence • etc 	2. Seeking Challenges
<ul style="list-style-type: none"> • Flexible thinking. • Not afraid of failure. • See obstacles as learning opportunities. • etc 	<ul style="list-style-type: none"> • negative view • not thinking of developing or changing oneself • Unable to build on ideas or create new frameworks • etc 	3. Failure growth, feedback seeking, problem solving and learning review.
<ul style="list-style-type: none"> • If facing problems, they are ready to seek multiple alternatives/solutions. • There are no restrictions on learning. • Have self-confidence and seriousness in getting things done. • etc 	<ul style="list-style-type: none"> • Fear of problems and obstacles. • Need for quick success, no patience. • No motivation to learn. • etc 	4. Building Confidence and Self-Discovery
<ul style="list-style-type: none"> • Tolerant, flexible, open and friendly. • Well adapted to different situations. • Accept and listen to others' reasons. • etc 	<ul style="list-style-type: none"> • Be self-centered • Stick to their own thoughts. • Difficult to get along with others. • etc 	5. Relationship building and impact on self and community

Conclusion

From the synthesized indications, it is evident that each component is something that occurs within the individual self. It is a matter of cognitive development for a youngster to acquire these ideal outcomes. This is a dilemma for academics and all parties involved if youngsters obtain knowledge or datasets that inspire them to alter their characteristics. If all organizations involved in human resource development comprehend these

concepts, they will be able to develop their citizens from birth. In addition, if we can test a child's Growth Mindset and identify the child's shortcomings. It can identify a direct development strategy and decrease resources that may not be useful for a distributed solution because the problem is not right there.

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Predictors of Tax Evasion Intentions: Does Individual Cultural Orientation Matter?

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Abstract

This paper examines the intention of individuals towards the payment of taxes and ascertains the dominant factors that drive such intentions. While the study aims to confirm the applicability of the Theory of Planned Behaviour (TPB) in predicting individuals' tax compliance behaviour, it further ascertains the role of individual cultural orientation in explaining an individual's attitude towards tax. Data for the study were collected through a self-administered survey conducted in Ghana and analysed using the structural equation modelling technique. Findings of this study confirm that attitude, subjective norm, perceived behavioural control and moral obligation have a statistically significant influence on an individual's intention to evade tax. The findings also demonstrate that two dimensions of culture (collectivism and long-term orientation) are important predictors of individuals' attitude towards tax.

Keywords: Tax Evasion, Individual Cultural Orientation, Theory of Planned Behaviour, Tax Compliance, Tax Avoidance, Intentions.

The Impact of Self-disclosure on Organizational Commitment among Employees and their Supervisors in Jordanian Pharmaceutical Companies

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Abstract

This research investigates the impact of self-disclosure on organizational commitment as perceived and practiced by employees toward their supervisors within Jordanian pharmaceutical companies. The research sample was randomly selected with a total number of 175 employees. A self-completed questionnaire was the main data collection method. The results of the study showed that self-disclosure is positively related to the organizational commitment. More specifically, self-disclosure breadth dimension was rated as the most important factor that has an impact on employees' commitment to their organizations. Furthermore, the findings showed that there is statistical difference in the employee's perception of self-disclosure due to employee's gender, age, educational level and experience. By the same token, the research findings showed that there is a statistical difference in the employee's perception of organizational commitment according to their age, educational level and number of working years. Based on the research findings, the authors do recommend the need for organizations to fully understand the effect of practicing self-disclosure on organizational commitment which might lead to protect the stability of the organizational workforce. Also, we have recommended the necessity for providing employees with more training programs in practicing the concept of self-disclosure. Finally, more researches and efforts in the area of the relationship between self-disclosure and organizational commitment should be considered in other business sectors.

Keywords: Self-disclosure, Organizational commitment, Jordanian pharmaceutical companies.

The 2008 Global Financial Crisis: Lessons from the Past and Lessons for the Present

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Abstract

The Black Swan is an economic catastrophe with three characteristics: it is unpredictable, carries a massive impact, and retrospectives describe the event as predictable. The 2008 Global Financial Crisis (The Great Recession) and the Great Depression were two examples of the Black Swan phenomena. However, the recession of 2019/2020 brought about by the advent of a global pandemic was not a Black Swan; pandemics have long been understood and, could have been mitigated at a low cost through early mask adoption and early fiscal relief. Nonetheless, the handling of the 2008 Global Financial Crisis was informed by the Great Depression and the 2008 Financial Crisis informed the handling of the 2019/2020 recession. The Great Recession, triggered by the bursting of the US housing bubble, was the result of unregulated mortgage-backed securities, reckless investors, unqualified borrowers, and poor regulatory policy. The Great Depression in the United States was the result of unregulated securities practices, reckless investors, and poorly qualified market participants. In both crises, the money supply dropped, and the economy "froze up." Lessons from the Great Depression applied to the Great Recession and applied to the 2019/2020 recession are these. When responding to a financial crisis, it is important to move quickly and aggressively with federal stimulus spending since consumers and businesses are not spending. This can take many forms such as infrastructure projects, debt relief, aid to states and cities, and safety-net programs. The Federal Reserve can lower interest rates to 0% and let the public know that rates will stay at 0% for an extended period of time even if inflation increases to stimulate borrowing. However, governments cannot run large budget deficits forever. According to John Maynard Keynes "the boom, not the slump, is the right time for austerity at the Treasury."

Keywords: Depression, Recession, Regulation, Stimulus Spending.

The Strategic Position of The United States Postal Service (USPS)

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Abstract

The United States Postal Service (USPS) has been a leader in mail delivery since 1775. In 1971, the USPS was dropped as a Cabinet Department and replaced with the current structure as an independent federal entity, yet still attached to the executive branch of government. As a federal entity, the USPS is bound to Congressional oversight and Constitutional law making it difficult for the USPS to effectively strategize, innovate, and maintain finances. To provide strategic direction, three strategy analysis tools were applied to determine potential strategic direction for the USPS--the Strategic Position and Action Evaluation (SPACE) Matrix the Grand Strategy Matrix (GSM), and the Quantitative Strategic Planning Matrix (QSPM). The SPACE Matrix findings report that the USPS faces major competitive disadvantages, is struggling financially, and is at a competitive disadvantage, but it could compete given the fast-changing and unstable industry. The GSM findings revealed that mail volume has decreased, but package volume has increased indicating rapid market growth and a potential for a strong competitive position in package delivery. Thus, the USPS should focus on continued improvements in sorting facilities, distribution, and delivery systems and vehicles. The findings of the QSPM indicate that the USPS should gain approval for new products/services to boost revenues while selling unneeded facilities, cutting jobs, and consolidating facilities to save costs. Since the USPS already has an advantage over competitors with its extensive network, the USPS often delivers packages for UPS and FedEx to locations that their delivery vehicles do not service. This is a competitive advantage that the USPS could strengthen with the improved efficiency of its delivery system and the USPS could expand its competitive advantage with new products and services.

Keywords: The United States Postal Service, strategy, Strategic Position and Action Evaluation (SPACE) Matrix, Grand Strategy Matrix (GSM), Quantitative Strategic Planning Matrix (QSPM).

Critical Analysis of the National Security Concept of Georgia

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Abstract

The National Security Concept of Georgia was adopted in 2011. It is a second conceptual document that outlines the security environment in Georgia, including the national interests, challenges, risks and threats, and main fields of cooperation. Despite the fact that it is a conceptual document and each governmental institution that works on various national security issues develops its action plan and security strategy for corresponding fields (such as energy security, cybersecurity, etc.), the necessity of a new document is overwhelming.

The security environment has dramatically changed over the course of recent years. The necessity of a new conceptual document and new security strategy has become more vivid in the light of the current Russia-Ukrainian conflict. Besides, it is clear that the National Security Concept of Georgia does not consider the peculiarity of Georgia's cultural context and its adversaries. Therefore, the threats and possibilities of the country and the influence of the global security context are not fully envisaged.

In my research, I will review certain aspects of the National Security Concept of Georgia and assess the document overall through the lenses of the Theory of Relativistic-Quantum Noology. In conclusion, essential elements concerning the development of the new conceptual document on national security will be outlined.

Keywords: National Security Strategy, Georgia, Relativistic-Quantum Noology, Russia-Ukraine Conflict, South Caucasus, Security.

NLP Algorithms to Predict Waste Generation from Industrial Process

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Abstract

In a context of Global Warming many strategies have to be developed to prevent a critical state in terms of increasing temperature. In such situation, the issue of waste treatment and their revaluation as input for other industries has to be treated and improved.

But, at first the question is how we can track this waste before thinking about their conversion? Indeed, a lack of data concerning wastes generated by industries tends to increase opacity around the scrap generated and its treatment. But also, how it could be treated as a raw material after that.

This need could be treated partially with such nomenclature like the European Waste Catalogue that identify many categories of waste and their origins.

But one of the main issue is how rely this nomenclature with French ones to improve reliability between the waste producer and the company, which could treat these wastes and revalue them.

A complementary solution of nomenclature use is the implementation of some natural language processing tools. In this paper we try to compute semantic proximity between manufacturing products as described on company's website and definition of waste and french product nomenclature sections. This methodology could be complementary to cross-walk between nomenclature made by organizations, and could be re-used for similar case of non-existing links between two different nomenclatures.

Keywords: Natural Language Processing, Waste treatment, Circular economy, European Waste Catalogue.

Connected Beehive, a State of the Art

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Abstract

Beekeeping has an economic importance through the service of pollination of crops and wild flora rendered by bees but also through the sale of products of the hive: honey, royal jelly, pollen, wax or venom. All of this represents today a world market of several hundred million euros. [1] It has been shown that insects are responsible for nearly 35% of the world's food production through their pollination activities. [2] Beyond food production, bees also play an important role in maintaining the biodiversity of floral species. However, since the early 2000s, bees have been threatened by anthropogenic pressures on their environment (depletion of floral resources, contamination of floral resources by pesticides, emergence of new parasites and predators). The repercussions of this collapse of colonies on our environment can be major. [3]

Being a beekeeper is mainly a logistic job. Indeed, it is not unusual for a professional beekeeper to place his hives 300km away to produce a particular honey or to access a particularly favorable spot. . It is now becoming crucial to be able to check the health status of the apiary before deciding whether an intervention is necessary or not and thus to plan the necessary equipment before intervening (food, frame of additional supers etc) Foraging, swarming, wintering, honey flow, brood,... there are so many words to describe the rich life of bees throughout the year! So many phenomena that the informed beekeeper will try to detect in order to know at best how life is going on inside the colony.

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The Dutch Disease Syndrome Side Effects in Manufacturing Employment: A VAR Analysis of the Azerbaijan Economy

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Abstract

Following the painful transition process from a command economy to a market economy, Azerbaijan used its rich hydrocarbon resources to promote economic growth and development. As a result, national income and per capita income soared, infrastructure improved and poverty declined. However, in addition to short-term positive results, the long-term sustainable growth of the Azerbaijan economy seems to be lagging behind due to the adverse effects of the oil boom. In other words, non-oil tradeable sectors, such as manufacturing, have failed to follow the prosperous course and gain a significant share of the economic success, employment, and exports owing to higher real effective exchange rate (REER) and domestic prices. This fact led to a set of studies on the Dutch disease phenomenon in the case of the Azerbaijan economy. So far, the literature has focused on highly aggregated data that fail to properly separate the effects of Dutch Disease; namely, resource movement and spending effects. In this paper, the resource movement effect of the Dutch disease is analyzed by focusing on employment in the manufacturing sector. However, the consideration of the spending effect has also been included for the sake of completeness. The results indicate that the response of manufacturing employment to mining employment is positive, but when services employment rises, manufacturing employment falls, and it is also negatively affected by oil prices and REER appreciation. Therefore, the indirect de-industrialization process induced by the Dutch disease can be observed, while direct de-industrialization can be scarcely be seen using the unrestricted standard vector autoregression (VAR) model. These results may be useful for policymakers to counter Dutch disease effects, ensure sustainable development goals and promote export-led growth policies in the manufacturing sector.

Keywords: Azerbaijan economy, Dutch disease, employment, labor resources, manufacturing, Natural Resource Curse, unrestricted VAR

JEL Classification: C32, F41, Q32, Q33.

1. Introduction

Azerbaijan is located in the South Caucasus region where Armenia, Georgia, Iran, Russia and Turkey are the main neighbors. Following the collapse of the Soviet Union, the region experienced a sequence of wars, tremendous systemic changes and stagnation. Thomas De Waal called the South Caucasus “an economically broken region” due to widespread deep-seated problems like poverty and income inequality (Waal, 2012). The neighboring countries have been doing their utmost to overcome economic, political and institutional challenges, but these efforts have failed to achieve solid results, as the region continues to be one of the most problematic regions of the world (Korganashvili et al., 2017). Opportunities for the economies in the South Caucasus seem to be limited in the case of Armenia and Georgia, but this is not the case for Azerbaijan. Azerbaijan’s immense oil and natural gas resources have stimulated extractive industry-led growth and development, which commenced in 1995. Simply stated, the ceasefire with Armenia, political stability, and the Contract of the Century propelled the extractive industry and encouraged national economic growth. Meanwhile, it also created the conditions for various structural challenges as the oil and natural gas industry flourished and became the main focus for the foreign direct investments (FDI) and government support (Hübner, 2011). This situation greatly hindered the development of the private sector, institutional quality and labor-intensive employment options for the general labor force (Shaw, 2013; Weeks, 2009; O’lear 2007).

Azerbaijan experienced an oil boom between 2005 and 2014 when the main upstream and downstream oil extraction projects were finalized. Oil output peaked in 2007, and a huge oil revenue flowed into the country in a very short time (Aliyev and Suleymanov, 2015). Then, Azerbaijan’s GDP and GDP per capita soared, poverty declined, and inflationary pressures were brought under control. In spite of this, the scholars continue to argue that the adverse effects outweigh the positive effects of oil-led development, as long-term sustainable economic

growth is not occurring right now due to the hard-hit non-oil processing industries—i.e., manufacturing and agriculture sectors (Ibadoghlu, 2012; Sadik-zada et al., 2021). This led to a series of studies on the Dutch disease and Natural Resource Curse theories and the need to establish explanatory theoretical frameworks for the Azerbaijan economy (Bayramov and Conway, 2010; Hasanov, 2013).

The Dutch disease is a serious threat to an economy if there are no official policy tools to identify and fight it. The original Dutch disease theory was devised to 1982 and 1984 when Corden and Neary (1982) and Corden (1984) modeled the structural changes of the Netherlands economy following the dramatic rise in the natural gas extraction and exports during the 1970s. The main idea behind the Dutch disease hypothesis is that rapid spending of the revenue from the booming sectors strengthens the national currency and moves the workforce out of productive tradeable sectors such as manufacturing and agrarian industries (Mironov and Petronevich, 2015). If the manufacturing and agriculture sectors lose their share of the GDP and net exports as a result of exchange rate appreciation, it will be more difficult to capitalize on possible improvements (innovative technologies, industrial spillovers, technical knowledge, and so on) and to gain from the learning-by-doing and other similar positive externalities that non-resource manufacturing sectors usually provide (Magud and Sosa, 2013). Academics have claimed that industry and agriculture help maintain economic development and that any displacement between the two in favor of the short-term booming sectors would harm the economy in the long run (Krugman, 1987; Matsuyama, 1992; Lucas, 1993; Hausmann et al., 2007). Even though natural resource revenue might positively effect manufacturing value-added in the short term, in the long term if dependency increases, this can lead to the de-industrialization of non-booming sectors (Sadik-Zada et al., 2019)

In the literature, authors raised early concerns about the Dutch disease syndrome in the Azerbaijan economy in the early 2000s (Gahramanov and Fan, 2002; Kaser, 2003; Mahnovski, 2003). The lack of institutional capacity, the poor political will to reform non-oil sectors, uncoordinated economic development, and rising regional inequality in the economic development in Azerbaijan has led to an industrial lopsidedness where the only the oil industry is prosperous (Ibadoghlu, 2008). This has placed the country into the position of oil dependency (Czech, 2018). And this is why several new studies started to argue about the presence of the Dutch disease (Hasanov, 2010; Hasanov, 2013). The main message of these studies was that decreasing manufacturing employment and output were anticipated due to costly domestic production and cheap imports thanks to rapid REER appreciation (Hasanov and Samadova, 2010). This has inevitably led to Azerbaijan's lopsided industrial growth in the total value added.

The country's industrial structure manifests itself in many ways. One of them is the structure of the labor market. More precisely, the employment structure of Azerbaijan should show signs of the Dutch disease if the labor resources has moved out from the manufacturing employment towards booming sectors or the services sector because of the oil boom and REER factors. Only a handful of studies have so far focused on the labor resources and tracked possible Dutch disease effects in Azerbaijan (see the article by Hasanov, 2013). Therefore, this study seeks to redress the balance and assess the potential signs of the Dutch disease in the labor market, focusing on manufacturing employment using unrestricted standard VAR applied to the quarterly data between 2000Q1 and 2020Q4. This study contributes to the research literature by analyzing a neglected topic in the case of the Azerbaijan economy in an empirical way. The objective of this study is to develop an unrestricted standard VAR model that reveals the short-term effects of Dutch disease-related variables (such as REER and oil prices) on industrial employment, especially manufacturing employment. Therefore, the analysis of the shocks among the most important oil-related economic indicators on manufacturing employment is the main novelty of this study. This allows us to conceptualize the direct or indirect de-industrialization process of the original Dutch disease theory described by Corden and Neary (1982) and Corden (1984). Stated briefly, the results presented here tell us that manufacturing employment responds negatively due to the shocks in oil prices, REER, and services employment. This corresponds to the indirect de-industrialization process of the Dutch disease theory. To ascertain the significance of the findings of this study a VAR Granger Causality test will be also used.

The structure of the paper is as follows. In the next section, a brief literature review will be presented about the Dutch disease and employment issues in Azerbaijan. After, in Section 3 the data and methodology used in the study are presented. In Section 4 the results of the study are reported. Lastly, pertinent findings concerning manufacturing employment with policy implications and also a brief discussion of some limitations of the study are given in Section 5.

2. Literature Review

The economic diversification of the Azerbaijan economy has always been an enormous challenge for the government (Ismayil, 2015). Following the collapse of the Soviet Union, political instability, and the war with

Armenia, Azerbaijan rapidly transformed its oil resources into the engine of economic growth and development (Bildirici and Kayıkçı, 2013). To accomplish this, the government stimulated large FDI inflows and Multinational Companies (MNCs) were invited to revitalize the old Soviet-style extraction industry. Therefore, all the state's institutional and governance developments served to expand the output of the oil industry (Ciarreta and Nasirov, 2012). As a result, GDP and GDP per capita rose, the state budget started to make a profit, government spending surged and poverty declined. However, structural issues in industrial production, employment, and exports are mostly from the oil and natural gas sector, and this puts the economy in a vulnerable position in times of volatile commodity prices and sudden changes in international commodity prices (Huseynov, 2017).

Early studies related to the risk of the Dutch disease in the Azerbaijan economy mainly focused on the political and institutional unpreparedness of the state officials to manage the increasing oil revenue. Lauria (1999) mentioned the delays in structural reforms and problems in the economic management of the available oil and non-oil resources which might undermine the industrial structure. Similarly, Singh and Lauria (1999) stated the risks of exchange rate appreciation in the medium- and long-term due to domestic inflationary pressures that may arise from the government's high propensity to spend rather than save the oil revenue. At the same time, the observations of Mahnovski (2003) and Kaser (2003) concerning the political regimes of Caspian basin countries led them to conclude that Azerbaijan might also experience Dutch disease effects as the government was motivated to just reform the booming sectors like the oil and natural gas industry. In other words, the state officials did not see structural reforms as something vital for economic growth and development. Consequently, during the late 1990s and early 2000s, the economists voiced their early concerns about possible Dutch disease effects in the Azerbaijan economy. However, the Dutch disease studies normally require statistical and econometrical investigations of the carefully constructed models. These type studies emerged later on in the case of Azerbaijan.

Hasanov (2013) conducted the most comprehensive study on the Dutch disease in the case of Azerbaijan. His analysis indicated that public expenditure had positive and long-run associations with non-oil GDP, and highlighted the spending effect relative to the resource movement effect predicted by the theory. Furthermore, oil prices had a statistically significant influence on REER appreciation, and the rise in real wages was put down to the spending effect of the Dutch disease process rather than increased productivity. This finding contradicted the findings of Gahramanov and Fan (2002), who argued that the monetary side of the Azerbaijan economy did not have any signs of the Dutch disease. However, Gahramanov and Fans's analysis lacked a proper statistical sample size for one basic reason. The oil boom period was yet to happen in 2005. In the year 2002, the available data obviously lacked the typical characteristics of the lopsided growth in the economic sectors. That is why the articles by Huseynov (2009), Hasanov and Samadova (2010), and Hasanov (2011) continued to uncover the driving forces of the structural changes in the economy of Azerbaijan. These causes included REER appreciation, domestic inflation, oil prices and a lagging non-oil manufacturing sector.

There were also studies that either badly analyzed the Dutch disease syndrome in the Azerbaijan economy, or rejected the idea of it altogether. For instance, Bayramov and Conway (2009) conducted producer surveys to ascertain the exact number of producers against the backdrop of oil prices and the global financial crisis. The authors' findings could not establish the presence of the Dutch disease effects. Bayramov and Conway (2009) argued that the global financial crisis was more apparent than signs of the Dutch disease in Azerbaijan. Also, Şanlısoy and Ekinçi (2019) conducted a nonlinear autoregressive distributed lag (NARDL) analysis between 2001Q1 and 2018Q2 to track the possible Dutch disease symptoms. They argued that Azerbaijan was not suffering from the Dutch disease because there was no withdrawal of labor resources from non-oil sectors. Şanlısoy and Ekinçi (2019) argued that the oil industry had become capital-intensive rather than labor-intensive, hence it only make small demands on the country's labor resources. Also, they found that oil revenue created additional demand for the other sectors of the economy, so the rest of the economy continued to function as expected without any significant slowdowns. While their findings and arguments are not wrong per se, it is a narrow approach for the Dutch disease theory, not to consider the indirect de-industrialization outcome of the resource movement effect modeled by Corden and Neary (1982). Similarly, Suleymanov and Bulut (2012) and Nuri Aras et al. (2016) just stated that the oil revenue itself was a tool in the hands of the government that could be used to fight Dutch disease because simply spending the revenue could help counter unemployment, capital aging, and so on. Furthermore, Bayraç and Çemrek (2019) analyzed the nexus between oil prices and GDP, and concluded that there was an absence of the Dutch disease syndrome in Azerbaijan. However, Corden and Neary (1982) and Corden (1984) never sought to analyze the commodity prices and GDP of countries as an explanation for the Dutch disease. Nevertheless, the studies by Hwand et al. (2010), Uçan and Ünal (2018) and Zulfugarov and Neuenkirch (2019) documented the significant role of the oil industry in the economy of Azerbaijan and its ability to shape the main macroeconomic realities such as the industrial structure, REER appreciation and

government spending. The literature contains lots of pro-Dutch disease studies and they considerably outnumber those that reject or badly analyze this syndrome in the case of the Azerbaijan economy.

Oxford Analytica's (2019) expert briefings continue to warn government officials about the need for economic diversification in Azerbaijan. Currently, rising oil prices and newly discovered oil and natural gas resources might influence the behaviour of the government, and once again make the economic diversification of the industrial production a non-priority of public policy. During the early years of its independence, Azerbaijan rapidly spent its oil revenue to overcome social problems (Ahmadov, 2022a). Although the government in recent years has tried to reform the economy to mitigate the signs of the Dutch disease, the real results of their policies are hard to find. Similarly, several recent research papers have also expressed worries about the Azerbaijan economy. For example, Yasmin et al. (2020) observed that, according to the Herfindahl-Hirschmann Index (Product HHI), Azerbaijan is the least diverse of the Caspian Basin countries, specializing mostly in mineral goods. Ahmadova et al. (2020), Bayramov and Abbas (2017), and Hamidova (2018) arrived at similar conclusions. These articles shed light on an essential developmental feature of Azerbaijan; namely, despite the fact that 30 years have passed since its independence from the Soviet Union and massive oil wealth has found its way into the country, the country's oil-dependency problem still remains. Naturally, an unbalanced economic system can introduce many obstacles to normal economic growth that may be explained by invoking the Dutch disease hypothesis; and employment and labor markets are no exception.

Some recent studies on Azerbaijan argued that oil was an important factor if one wished to determine the trends and dynamics of structural changes in employment and labor markets. For instance, Alizada (2021) found that overall low levels of labor productivity were associated with the rising oil dependency of Azerbaijan. This started to change following the sharp price slumps of commodities in 2014 and 2015, and the state made efforts to decrease its oil dependency. Ahmadov (2022b) argued that compared to other post-socialist countries like Hungary, Azerbaijan's structural problems had a significant impact on the labor market. While FDI-led economic development increased the number of well-paid jobs in Hungary, the large share of the casual employment sector and lack of economic development strategies failed to create a balanced structure in industrial employment. Namazova (2021) also mentioned the quality issues of human resources caused by the mismanagement of the labor markets. Hence, further analyses of the impact of the oil boom on the employment structure in Azerbaijan are required. This would not only enrich the literature but also help provide specific policy guidelines for the government officials.

Reviewing the relevant literature, the main research question of this study is the following: What were the effects of the Dutch disease-related economic variables such as oil prices, REER, mining and services employment on manufacturing employment between 2000Q1 and 2020Q4 in the case of the Azerbaijan economy?

3. Data and Methodology

The time series for REER were collected from Bruegel data sets (<https://www.bruegel.org>) that were based on 67 trading partners. However, the data for employment in mining, manufacturing and services came from the State Statistical Committee of the Republic of Azerbaijan (SSCRA). While mining employment means the employment in extractive industries such as oil, iron ore and natural gas extraction, manufacturing employment includes employment related to the processing industry (including the manufacturing of oil and petroleum products). Also, oil prices (BRENT trademark) were collected from International Energy Agency—<https://www.iea.org>.

REER figures are in percentage terms but the employment data are given in thousands of persons. Oil prices are given in US dollars of the BRENT trademark. Below, Table 1 lists the descriptive statistics of the variables of interest. Only REER and services data are normally distributed variables according to the Jarque-Bera test. Here all the variables are quarterly data between 2000Q1 and 2020Q4. And while REER and oil prices were simply collected in their quarterly form, sectoral employment figures were generated from the annual data by the data conversion function—from a low to high frequency—using the Eviews econometrics software package version 10.

Table 1. Descriptive statistics of the variables of interest.

	REER	Oil prices	Mining Employment	Manufacturing Employment	Services Employment
Minimum	25.9	12.9	33.5	84.1	757.4
Maximum	155.7	124.1	92.3	268.2	1424.8
Mean	102.2	50.2	43.9	129.0	1100.4
Median	98.8	46.2	37.6	107.2	1100.5

Standard deviation	24.3	28.9	15.7	47.3	171.8
Jarque-Bera value	4.3	8.8	99.9	61.6	4.70
Probability	0.12	0.01	0.00	0.00	0.09

Source: The author's calculation based on the time series.

Note: Here, figures were rounded to the first decimal point for compactness (excluding probability values for the Jarque-Bera test).

The methodology of this study is the unrestricted standard VAR. VAR is a linear technique where each variable is explained by its own lagged values and the past or current values of the explanatory variables. Sims (1980) pioneered an economics-based VAR exercise and since then it has been a widely used as forecasting and data description tool. Also, VAR is a useful econometric methodology for dynamically assessing the effect of shocks on one of the variables in time series data (Ybrayev, 2021).

The econometric methodology of this research paper was constructed after the careful consideration of the article by Koitsiwe and Adachi (2015, Dutch disease research in the case of Australia). Here, the macro-econometric model can be formally specified in the following way:

$$Z_t = \alpha + \sum_{j=1}^p \pi_j Z_{t-j} + \sum_{j=0}^m \varphi_j X_{t-j} + \delta_t + \epsilon_t \quad (1)$$

where Z_t represents the vector of endogenous variables, π_j is a matrix of k autoregressive coefficients at lag i , X_t is a vector of q exogenous variables, φ_t is a matrix of q coefficients on the exogenous variables, and ϵ_t is the error term. Similar to Koitsiwe and Adachi's article (2015), in the macro-econometric methodology it is assumed that the error term has no serial correlation and it has a covariance matrix.

As the focus of this study is manufacturing employment in Azerbaijan, Equation (1) can also be expressed as follows:

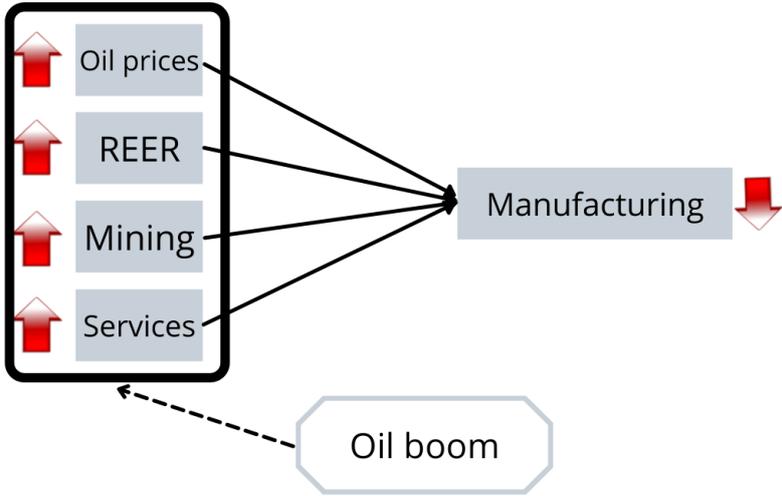
$$\begin{aligned} \Delta MANEMP_t = & \beta_{10} + \beta_{11} \Delta OILP_t + \dots + \beta_{1j} \Delta OILP_{t-n} + \beta_{12} \Delta REER_t + \dots \\ & + \beta_{1j} \Delta REER_{t-n} + \beta_{13} \Delta MINEMP_t + \dots + \beta_{1j} \Delta MINEMP_{t-n} + \\ & + \beta_{14} \Delta SERVEMP_t + \dots + \beta_{1j} \Delta SERVEMP_{t-n} + \epsilon_{1t} \end{aligned} \quad (2)$$

where $OILP$ is the oil price, $REER$ is the real effective exchange rate, $MINEMP$ is mining employment, $SERVEMP$ denotes the services employment figure, and ϵ is the error term.

Similar to Koitsiwe and Adachi (2015), the order of the variables is based on the level of exogeneity of the explanatory variables. This means that oil prices are the first, REER is the second, mining employment is the third and services employment is the fourth variable to affect manufacturing employment in Azerbaijan. Employment in the mining sector and employment in the services sector are the domestic factors that influence manufacturing employment, but oil prices and REER reflect international realities in the case of the Azerbaijan economy. Chart 1 shows the expected empirical direction of the relationship among the variables of interest. In other words, manufacturing employment should decrease when oil prices, REER, services and mining employment increase. There are additional factors that affect the employment of non-booming sectors within the Dutch disease theory such as domestic output, consumer and producer prices, and subsidies for non-oil sectors but these are only of secondary importance in this study.

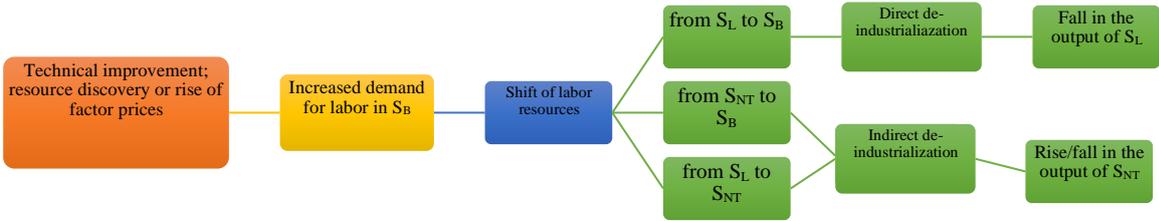
As the main focus here, the analysis is essentially based on the resource movement effect of the Dutch disease syndrome rather than the spending effect. However, these two rarely occur separately. Stated briefly, if a three-sector economy is assumed, namely booming sectors (S_B), lagging sectors (S_L) and non-tradable sectors (S_{NT}), then technical improvements, resource discoveries, or simply a rise in the factor prices lead to an increased demand for labor in S_B (see Chart 2). This either shifts labor from S_L to S_B , which is called direct de-industrialization and shrinks the output of S_L or the labor out of S_L shrinks with the movement from S_B to S_{NT} . The latter is called indirect de-industrialization, and this leads to a fall in the output of S_{NT} . In some cases, the output of S_L rises (Corden, 1984).

Chart 1. The expected direction of the relationship among the variables of interest.



Source: Adapted from the Dutch disease theory by Corden (1984).

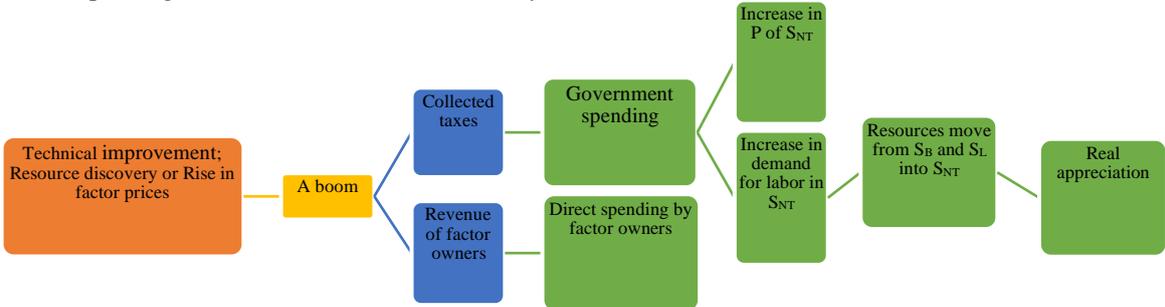
Chart 2. Resource movement effect of the Dutch disease theory.



Source: Adapted from Corden (1984).

The spending effect of the Dutch disease phenomenon takes place when a fraction of additional revenue is spent either directly by factor owners (i.e., when a business directs spending to intermediate inputs) or indirectly by the authorities (when the government gets revenue in the form of royalties, taxes, or profits, Corden, 1984). Corden (2012) noted that the spending effect is limited to "at-home" expenditure, as opposed to spending on imports, premium transfers, and the purchase of foreign assets. In addition, a particular instance arises when S_B is not a participant in domestic factor markets and it is not a movable factor in the economy during an oil boom. S_B is an "enclave" (Corden, 1984). In this scenario, the economy does not undergo direct de-industrialization (the resource movement impact is absent), and resource allocation occurs during the period of real appreciation. Thus, the spending impact causes resources to flow from S_B and S_L into S_{NT} , but demand flows in the other direction - from S_{NT} to S_B and S_L . The spending effect mostly results in an increased production in S_{NT} during and following the boom period.

Chart 3. Spending effect of the Dutch disease theory.



Source: Adapted from Corden (1984).
Notes: P denotes prices.

4. Results

4.1. Descriptive Analysis

Before the VAR analysis, the overall sectoral decomposition of employment, REER and oil prices were descriptively analyzed to conceptualize the data. Average values and growth rates—year-over-year and cumulative growth rates, and proportion of the total employment figure—based on time periods of the Azerbaijan economy show the main trends and dynamics behind the variables of interest utilized in this study (see Table 2).

Here, an overview of employment in the Azerbaijan economy makes it clear that the mining industry had the smallest labor force, while the services sector was the biggest source of employment between 1990 and 2020. In other words, the mining industry experienced a decline of 5.6% and 14.5% in 1990–1994 and 1995–1999, then an increase of 1.2% between 2000 and 2004 because in the pre-boom period there was rapid construction and development of the oil the pipeline infrastructure. Meanwhile, manufacturing employment declined from 279.6 thousand persons between 1990 and 1994 to 109.7 thousand persons between 2015 and 2020. Despite this, its manufacturing employment share rose to 7% in the period of 2015 and 2020 following the lowest share of 6.6% between 2010 and 2014. Employment in the services sector had been gradually rising since 2000 and this sector had the most stable and consistent upward trend in the study period.

REER and oil prices are important variables for establishing the effects of the commodity supercycle that started in the early 2000s. As soon as Azerbaijan started to undergo an oil boom in its economy when world oil prices rose, REER appreciated and it had positive year-over-year growth rates of 1.04% and 3.70% in the periods 2005–2009 and 2010–2014, respectively (see Table 2). Only the post-boom period (2014–2020) delivered lower cumulative growth rates in REER in parallel with the lower annual oil prices of 54.62 USD per barrel.

Table 2. Employment, REER and oil prices in Azerbaijan between 1990 and 2020.

	1990– 1994	1995– 1999	2000– 2004	2005– 2009	2010– 2014	2015– 2020
Mining^a						
Overall employment, thsd. persons	96.2	56.7	37.7	39.6	35.8	34.2
Year-over-year growth rate, in %	-5.6	-14.5	1.2	-2.1	0.1	-0.6
Cumulative growth rate, 1990=100%	85.9	37.8	5.1	10.8	1.8	-2.5
Cumulative growth rate, 2000=100%	–	–	102.6	153.7	172.4	169.6
Share of total employment, in %	5.0	4.2	3.1	2.9	2.5	2.2
Manufacturing^a						
Overall employment, thsd. persons	279.6	176.9	110.4	105.1	96.1	109.7
Year-over-year growth rate, in %	-5.6	-6.7	-10.4	0.1	1.8	3.8
Cumulative growth rate, 1990=100%	85.9	45.6	4.1	1.7	-5.8	8.2
Cumulative growth rate, 2000=100%	–	–	75.7	73.3	65.9	79.9
Share of total employment, in %	14.6	13.2	9.0	7.7	6.6	7.0
Services						
Overall employment, thsd. persons	1,030.4	8,66.0	969.7	1,114.0	1,227.7	1,318.3
Year-over-year growth rate, in %	-1.7	-0.6	2.3	2.1	2.1	1.7
Cumulative growth rate, 1990=100%	97.1	80.5	93.9	108.1	118.0	125.3
Cumulative growth rate, 2000=100%	–	–	108.9	123.3	132.3	138.4
Share of total employment, in %	53.9	65.1	79.3	81.8	84.3	83.8
Real Effective Exchange Rate^c						
Average values, in percent	83.60	81.45	80.28	96.41	116.97	103.91
Year-over-year growth rate, in %	-3.00	-0.17	3.16	1.04	3.70	-2.25
Cumulative growth rate, 1990=100%	91.73	90.11	89.20	108.60	129.43	118.12
Cumulative growth rate, 2000=100%	–	–	105.92	125.33	146.16	134.85
Oil prices, BRENT trademark						
Average prices, in USD	19.20	17.49	29.04	70.17	102.00	54.62
Year-over-year growth rate, in %	-1.53	5.64	19.14	14.14	11.49	-8.75
Cumulative growth rate, 1990=100%	79.18	76.68	152.65	257.07	314.74	275.99
Cumulative growth rate, 2000=100%	–	–	102.28	206.70	264.38	225.62

Source: SSCRA, 2022.

Notes: a- Mining employment data for 1990–1998 were calculated based on the average share of mining employment in the overall employment total for the period 1999–2020 as SSCRA provides only aggregated data for 1990–1999 with a general category of “industry”, not mining and manufacturing separately; b- Agriculture, forestry, and fishery data only include agriculture and forestry for the period of 1990–1998; c- REER calculations for year-over-year growth rates do not include the data of 1990.

4.2. Unit Root Tests and Optimum Lag Length Criteria

Before performing a time series analysis, the stationarity of the variables of interest needs to be examined. An augmented Dickey-Fuller unit root test of the variables of interest revealed that all of the variables are not stationary at their level, but at their first difference they do not have any unit root, so they are stationary (see Table 3). Only services employment with a constant and a trend maintained its non-stationarity at the first difference, while all the other variables were stationary to first order. Nevertheless, this fact does not prevent a consideration of the first difference of the variables for the analysis of the short-term dynamics. This is why in the VAR model employed the differenced form of the variables is used so to have the same integration order, and this made them suitable for analysis.

Table 3. Augmented Dickey–Fuller Unit Root Test of the Variables of Interest.

		<u>At Level</u>				
		MAN	MINING	OIL PRICE	REER	SERVICES
With Constant	t-Statistic	-1.3377	-2.2696	-2.5541	-1.2623	-0.5424
	<i>Prob.</i>	0.6082	0.1842	0.1068	0.6437	0.8762
		n0	n0	n0	n0	n0
With Constant & Trend	t-Statistic	-1.4497	-3.7627	-2.4272	-1.2263	-2.9812
	<i>Prob.</i>	0.8382	0.0239	0.3632	0.8982	0.1441
		n0	**	n0	n0	n0
Without any Constant & Trend	t-Statistic	0.6805	-0.7599	-0.6120	-0.0561	2.1897
	<i>Prob.</i>	0.8607	0.3842	0.4493	0.6612	0.9929
		n0	n0	n0	n0	n0
		<u>At First Difference</u>				
		d(MAN)	d(MINING)	d(OIL_PRICE)	d(REER)	d(SERVICES)
With Constant	t-Statistic	-3.8325	-3.5432	-7.5232	-8.2174	-3.1126
	<i>Prob.</i>	0.0039	0.0093	0.0000	0.0000	0.0297
		***	***	***	***	**
With Constant & Trend	t-Statistic	-4.0690	-3.6447	-7.5957	-8.1759	-3.0902
	<i>Prob.</i>	0.0101	0.0324	0.0000	0.0000	0.1159
		**	**	***	***	n0
Without any Constant & Trend	t-Statistic	-3.8758	-3.5700	-7.5706	-8.2659	-2.0189
	<i>Prob.</i>	0.0002	0.0005	0.0000	0.0000	0.0423
		***	***	***	***	**

Source: The author’s own calculations based on the collected data.

Notes: 1) Here, n0 means the null hypothesis. This hypothesis indicates that the series has a unit root; 2) the symbols *, **, and *** indicate a statistical significance at the 10%, 5%, and 1% levels, respectively.

To determine the optimal lag length, a lag length criteria analysis was carried out. According to Table 4, the lag of five quarters is the optimal one because the LR, FPE and AIC criteria overlapped in their recommendation. SC and HQ indicated only one lag as a selection criterion; however, a one-quarter lag does not make any empirical sense in a large sample size that is based on quarterly data. This is why five quarters best fitted the main research design and were incorporated into the VAR model.

Table 4. VAR optimum lag length criteria.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1020.211	NA	252577.1	26.62885	26.78104	26.68973
1	-950.3427	128.8475	78876.96	25.46345	26.37662*	25.82871*
2	-935.4083	25.60184	103295.0	25.72489	27.39904	26.39453
3	-920.7449	23.23291	137956.7	25.99337	28.42850	26.96740
4	-876.4074	64.49086	86900.87	25.49110	28.68720	26.76951
5	-829.1269	62.63132*	52098.74*	24.91239*	28.86946	26.49518
6	-808.3481	24.82672	64480.44	25.02203	29.74008	26.90921

Source: The author’s own calculations based on the collected data.

Notes: Here, * indicates the suggested lag length; LR: sequential modified LR test statistic (each test at the 5% level); FPE: final prediction error; AIC: the Akaike information criterion; SC: the Schwarz information criterion; HQ: the Hannan-Quinn information criterion.

4.3. VAR Estimations (Impulse Response Functions)

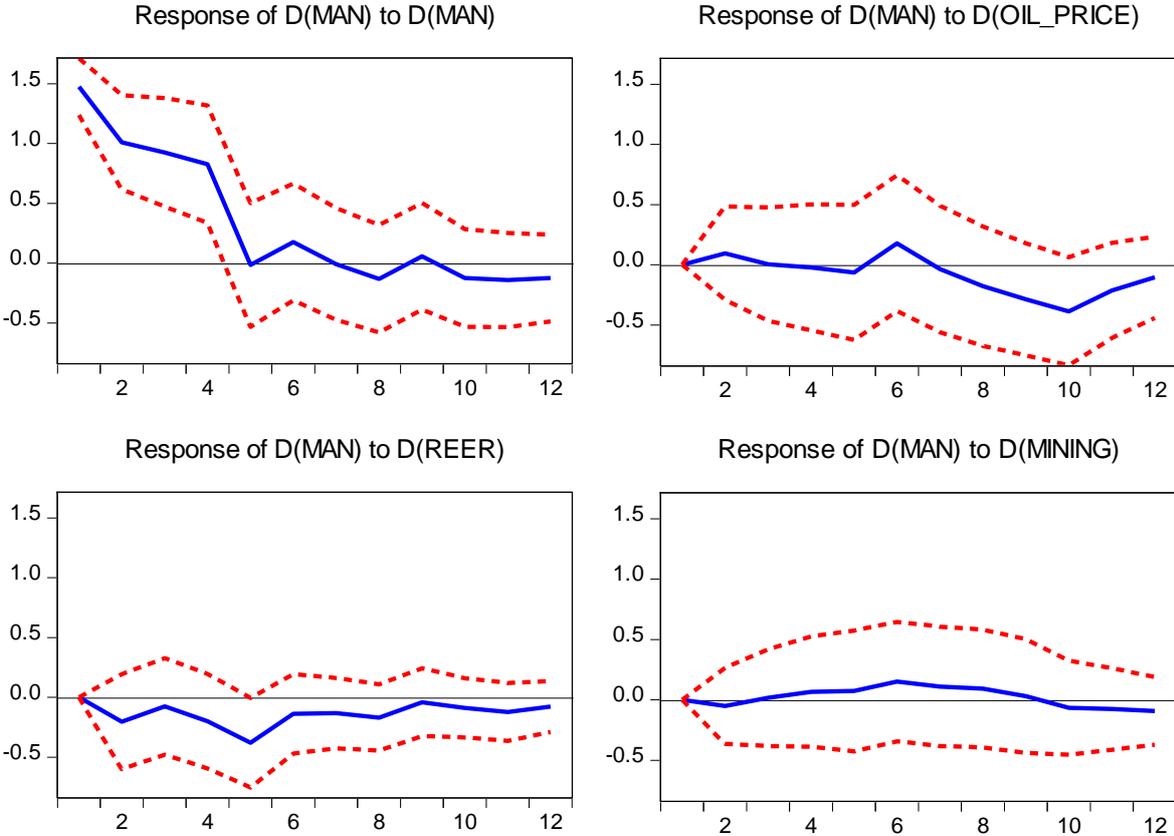
Figure 1 shows the impulse response functions (IRFs) of manufacturing employment to itself, to oil prices, to REER, to mining and services employment. The response of manufacturing employment to the shocks caused by itself is positive in the first four quarters, but starting from the fifth quarter it fluctuates up to the tenth quarter. The last two quarters indicate negative responses of manufacturing employment to the shocks to itself.

The response of manufacturing employment to the shock in oil prices is initially positive (second quarter), but the third, fourth and fifth quarters produce either zero or negative responses. Following the positive response of the sixth quarter, the rest of the periods are negative responses to the shocks in the oil prices.

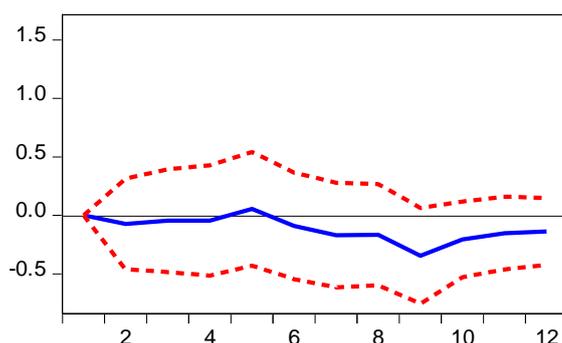
The response of manufacturing employment to REER shocks is negative in all the periods examined. This implies that there is a strong and significant impact of REER on manufacturing that coincides with the signs anticipated by Dutch disease theory. Furthermore, manufacturing employment negatively responded to the shocks in mining employment during the second quarter, but from the third to the ninth quarter the responses were positive. This aspect of manufacturing and mining employment reflects the capital-intensiveness of the oil industry in Azerbaijan because the work force that moves out of the oil industry sector was absorbed by non-oil manufacturing sector. However, the response of manufacturing employment turned out to be negative following the mining employment shocks commencing from the tenth quarter.

In the case of the response of manufacturing employment to the shocks in the services sector, employment was only positive in the fifth quarter and in all the other quarters it was negative.

Figure 1. Impulse response functions (IRFS) of manufacturing employment in VAR models.



Response of D(MAN) to D(SERVICES)



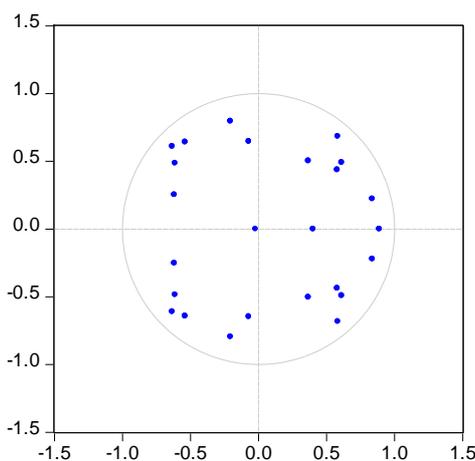
Source: The author’s own calculations based on the collected data.

Notes: Here, 1) Response to Cholesky one S.D. Innovations ± 2 S.E; 2) MAN denotes manufacturing employment, MINING is the mining employment in thousands of persons, SERVICES is the employment in the services sector in thousands of persons. Similarly, REER is the real effective exchange rate and OIL_PRICE denotes oil prices.

4.4. Diagnostics of VAR Results

The VAR results should be checked using several stability tests to ensure the validity of these results. For instance, after estimating a VAR model, usually the dynamically stable model is examined, and the dynamical stability requirement is checked using Roots of the Characteristic Polynomial. If all of the eigenvalues fall within the unit circle, the VAR model satisfies the stability requirement. Figure 2 shows the inverse roots of the Auto-Regressive (AR) characteristic polynomial and all the eigenvalues lie inside the circle.

Figure 2. Inverse roots of Auto-Regressive (AR) characteristic polynomial.



Source: The author’s own calculations based on the collected data.

Next, there should not be any widespread deviations of residuals from two standard error bounds in terms of their autocorrelation values. As can be seen in Figure 3, the values lie inside the two standard error bounds with a handful of exceptions.

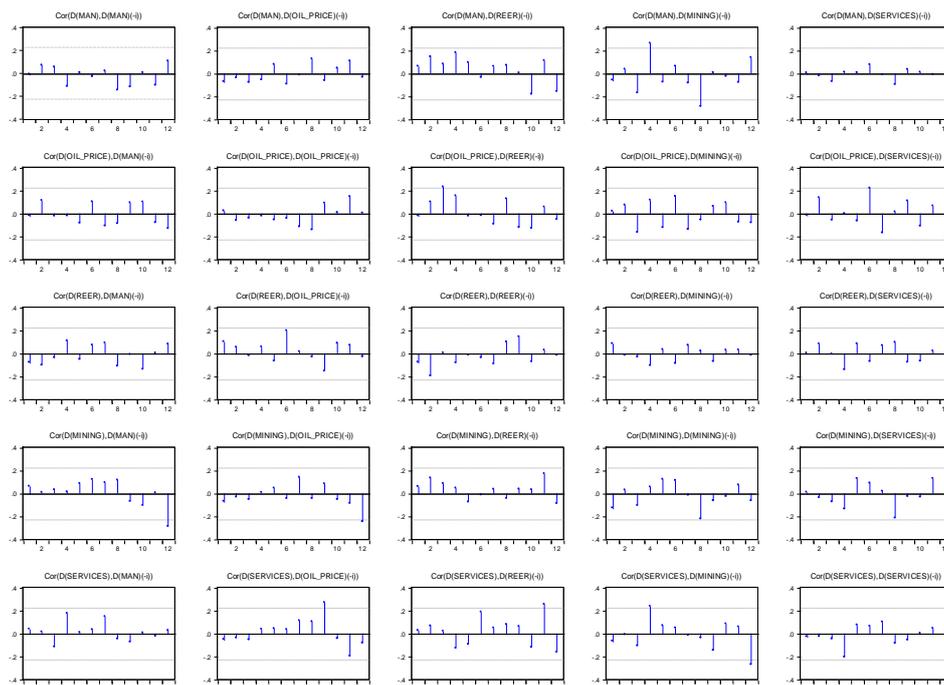
Table 5. VAR Residual Serial Correlation LM Tests.

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	20.76	25	0.706	0.82	(25, 161.2)	0.708
2	25.25	25	0.449	1.02	(25, 161.2)	0.451
3	27.00	25	0.357	1.09	(25, 161.2)	0.360
4	59.66	25	0.001	2.66	(25, 161.2)	0.001
5	22.38	25	0.614	0.89	(25, 161.2)	0.616

Source: The author’s own calculations based on the collected data.

Notes: Figures were rounded to the second decimal point for the sake of compactness (excluding the probability values).

Figure 3. Autocorrelations with approximate 2 Std. Err. Bounds.



Source: The author's own calculations based on the collected data.

Lastly, the VAR residual serial correlation LM test indicated that there was no serial correlation in the model in the five-year lag form (see Table 5).

4.5. Variance Decomposition

Table 6 lists the forecast error (SE) expressed as a percentage of the VAR error, and each column shows how much of the error is explained by each variable. In this case, the variance decomposition technique was used since it provides information on the relative importance of each random shock to the VAR system (Ayadi, 2005). Therefore, the variance decomposition of the estimated VAR model for manufacturing employment in Azerbaijan between 2000Q1 and 2020Q4 indicates that the predominant determinant of the forecast error was manufacturing employment's own shocks (see Table 6). REER rapidly improved its explanatory power up to 4.89% in the six-quarter ahead period, reaching 5.55% in the twelve-quarter ahead forecast error. The same trend is observed in the case of oil prices—6.22% in the twelve-quarter ahead forecast. The services employment can explain the forecast error up to 4.76%, but mining employment has only a slight effect. The latter reveals the irrelevance of the direct de-industrialization process that occurred as the result of the resource movement effect of the Dutch disease syndrome, even though manufacturing responded positively to the mining employment shocks on IRFs (see Figure 1).

Table 6. Variance decomposition of manufacturing employment (DMAN).

Period	S.E.	D(MAN)	D(OIL_PRICE)	D(REER)	D(MINING)	D(SERVICES)
1	1.48	100.00	0.00	0.00	0.00	0.00
2	1.81	98.20	0.28	1.27	0.08	0.17
3	2.03	98.38	0.22	1.14	0.07	0.18
4	2.21	97.66	0.20	1.80	0.15	0.20
5	2.24	94.60	0.28	4.62	0.26	0.25
6	2.26	93.12	0.90	4.89	0.70	0.40
7	2.28	92.05	0.91	5.17	0.93	0.95
8	2.30	90.40	1.49	5.60	1.07	1.44
9	2.35	87.04	2.93	5.42	1.05	3.57
10	2.39	83.98	5.42	5.35	1.08	4.16
11	2.41	82.75	6.10	5.50	1.16	4.48
12	2.43	82.18	6.22	5.55	1.29	4.76

Source: The author's own calculations based on the collected data.

Notes: 1) Figures were rounded to the second decimal point for the sake of compactness; 2) S.E. means standard error.

4.6. VAR Granger Causality Test

Lastly, VAR Granger Causality Tests were applied to discover whether the time series used in the analysis can predict each other, especially in manufacturing employment. The results failed to indicate a unidirectional causality from the variables of interest toward manufacturing employment (see Table 7). In spite of this, REER and mining employment can still be predicted via manufacturing employment and oil prices due to their individual and joint statistical significance.

Table 7. Results of VAR Granger Causality.

Dep. Var.	Δ MAN	Δ OIL P	Δ REER	Δ MIN	Δ SERV	Δ JS
Δ MAN	–	5.31 (0.379)	6.09 (0.298)	0.83 (0.975)	1.99 (0.851)	14.38 (0.811)
Δ OIL_P	4.76 (0.446)	–	2.97 (0.705)	4.81 (0.440)	2.30 (0.807)	8.87 (0.984)
Δ REER	9.85 (0.080)*	74.41 (0.000)***	–	13.55 (0.019)**	10.13 (0.071)	90.86 (0.000)***
Δ MIN	21.34 (0.000)***	9.80 (0.081)*	6.11 (0.295)	–	3.98 (0.552)	48.21 (0.000)***
Δ SERV	3.17 (0.674)	1.06 (0.957)	3.60 (0.678)	1.77 (0.879)	–	8.22 (0.990)

Source: The author's own calculations based on the collected data.

Notes: Here, 1) the symbols *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively; 2) Figures were rounded to the second and to the third decimal point for compactness; 3) Figures in the parentheses are the corresponding probability values; 4) MAN, OIL_P, REER, MIN and SERV denote manufacturing employment, oil prices, the real effective exchange rate, mining employment and services employment, respectively.

5. Conclusions

In this study, the empirical validity of the Dutch disease syndrome in the case of industrial employment in the Azerbaijan economy was examined. In other words, manufacturing employment was analyzed in terms of the most important economic indicators listed in the Dutch disease studies, namely oil prices, REER, mining, manufacturing and services employment. The Dutch disease phenomenon has an elusive and debatable nature in the case of Azerbaijan. While some scholars have rejected its relevance, some have emphasized its visible effects, especially in the structure of employment. Therefore, after considering the literature and available data, the following research question was proposed to capture possible Dutch disease effects on the industrial employment side: What were the effects of the Dutch disease-related economic variables such as oil prices, REER, mining and services employment on manufacturing employment between 2000Q1 and 2020Q4 in the case of the Azerbaijan economy?

Unrestricted standard VAR estimations provided good evidence of the indirect de-industrialization phenomenon of the Dutch disease theory in the case of manufacturing employment in the Azerbaijan economy between 2000Q1 and 2020Q4. Because while REER and services employment rose, manufacturing employment decreased. Compared to the direct de-industrialization outcome of the resource movement effect of the Dutch disease when labor moved from lagging economic sectors such as agriculture and manufacturing to booming sectors, the government spending on oil revenue created jobs in the tertiary sectors and this led to increased employment in the services. According to the AR characteristic polynomial, autocorrelations and VAR residual LM test, the estimated VAR model for manufacturing employment is very stable and valid. However, the VAR Granger Causality test failed to capture any significance between manufacturing employment and the Dutch disease-related variable. Nevertheless, REER had an individual and joint statistical significance in terms of oil prices, mining and manufacturing employment. These findings shed light on the presence of the Dutch disease syndrome that should be addressed at the government level to overcome structural challenges in the long-term sustainable economic growth and development of Azerbaijan's economy.

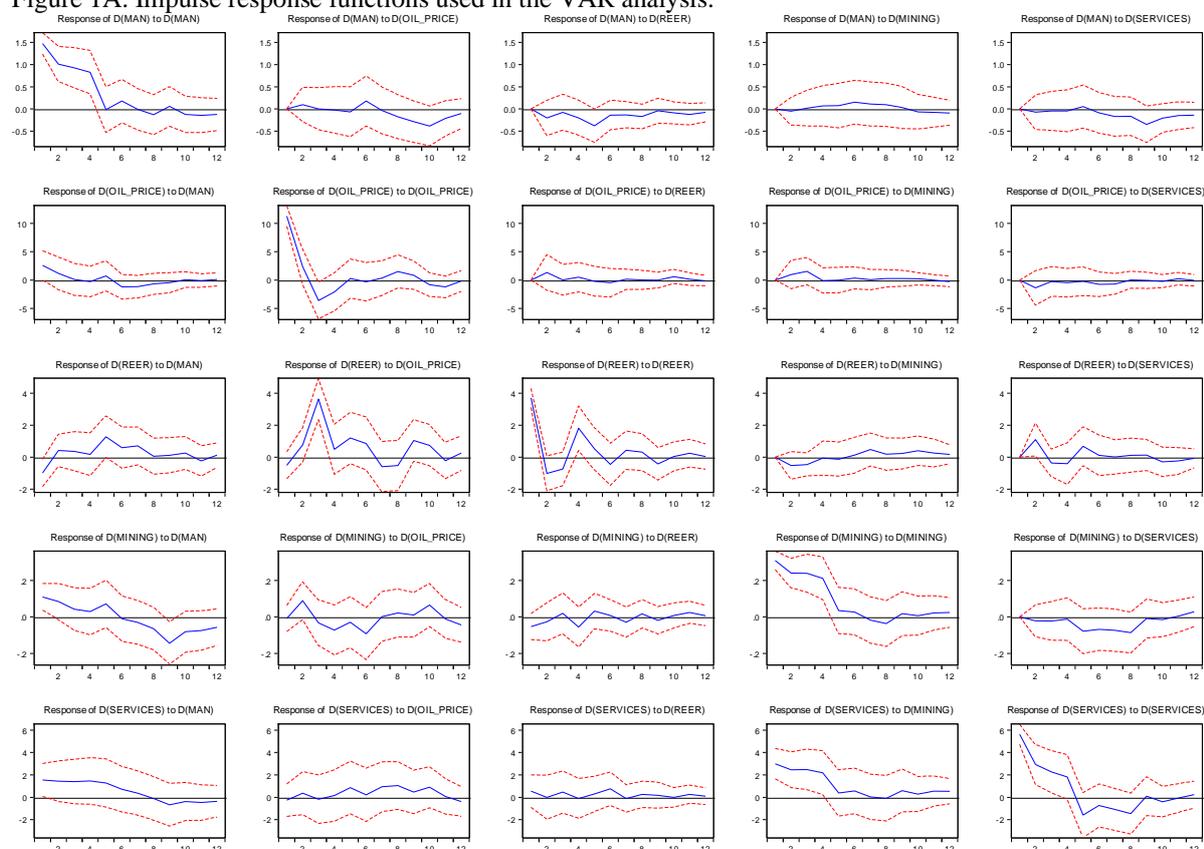
The findings of this study have several policy implications. Firstly, the capital-intensive nature of the oil sector in Azerbaijan means it has a low job-creation effect on the overall economy and occasional REER appreciations decrease the competitiveness of non-oil production. Secondly, the prevailing indirect de-industrialization process hinders the long-term economic growth and development of Azerbaijan's economy because manufacturing is the engine of growth and it failed to maintain a leading position in the economy. This is an alarming situation for the government and decision-makers because getting large oil revenues and rapidly spending them did not lead to balanced industrial employment and production in Azerbaijan between 2000 and 2020. Thirdly, the post-boom period produced several government initiatives for reforming the institutions and developing the old industrial

facilities. Despite this, REER has been appreciating since 2020 and the rise in oil prices has demotivated the government policymakers and slowed down the reforms and liberalization of the country's economy.

The surprising findings of this study are that, despite negative responses to the shocks in REER, oil prices, services and manufacturing employment obtained using IRFs, the manufacturing employment's VAR Granger Causality test failed to confirm the expected relationship between endogenous variables and manufacturing employment. Moreover, the main limitation of this study is that the econometric modeling mainly focuses on the short-term effects of the shocks in Dutch disease-related variables on manufacturing employment. If a co-integration relationship exists among the variables, long-term estimations by the Vector Error Correction Model (VECM) may be useful in the further studies. Also, additional studies could include subsector employment data in the Dutch disease theory to get a better overall picture. All in all, one thing is certain. The analysis of Azerbaijan's Dutch disease syndrome is far from over and it needs to be systematically analyzed to help guide non-oil manufacturing development policies made by the government.

Appendix

Figure 1A. Impulse response functions used in the VAR analysis.



Source: The author's own calculations based on the collected data.

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Sustainable Crafts/ Circular Economy: Identification of the Main Research Advances Through Bibliometric Analysis

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Abstract

Sustainability has been progressively incorporated into all dimensions of society in response to the negative externalities of the traditional production model, and the craft sector has not been immune to it. In this way, this research work carried out a bibliometric analysis on 894 research articles in the Scopus database on sustainable crafts in the 21st century, identifying growth trends in the number of published articles, journals, authors, institutions and most productive countries. Additionally, the main research topics that emerged in sustainable crafts are detected in three periods of time: before the international financial crisis, the post-crisis period and, finally, the concept within the framework of the 2030 Agenda and the Sustainable Development Goals. We conclude that there has been an exponential growth in the line of research, especially as a consequence of the Sustainable Development Goals, as a result of all the bibliometric indicators analyzed, which has given rise to a greater number and richness of the research topics identified.

Translanguaging in the Algerian EFL University Classrooms: Teachers' and Students' Practices

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Abstract

The beginning of the post-multilingual era, especially within applied linguistics, has led to challenging and questioning the monolingual assumptions in the English language classroom through acknowledging the dynamic practices, social justice, and differences of multilinguals. Therefore, the recent publication of Garcia and Wei (2014) about translanguaging, bilingualism, and education, translanguaging has increasingly received attention from different scholars around the world, especially in the educational context. Having consulted the scholarship on translanguaging, however, there is scarce research about the teachers' and students' translanguaging practices and their perceptions in English as a foreign language (EFL) university classrooms, especially in contexts that are characterized by their sociolinguistic diversity. Therefore, this paper discusses the translanguaging practices that EFL teachers and students deployed when they engaged in classroom talk and the functions achieved behind these fluid practices. To achieve the research aims, I conducted an exploratory case study at the department of English at Mohamed Lamine Debaghine University, Setif 2 University, in Algeria. The data was collected qualitatively through recorded classroom observations with field notes. The findings showed that translanguaging is an investable practice in the EFL classroom talk; however, there were differences between the teachers' and students' practices. While on the one hand, the teachers used their languages at the word level mainly for explanatory and expressive functions, the students deployed their own languages at the sentence level for eliciting information and explanation, feedback and correction, and expressive functions. Consequently, it seems that translanguaging has a role in a specific situation in the EFL university classes which may lead to understanding these dynamic practices and questioning the potential challenges and benefits of the teachers' and students' translanguaging practices in multilingual contexts like the Algerian one.

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Keywords: Algerian context, classroom talk, functions, multilinguals, practices, teachers and students, translanguaging, university EFL classrooms.

Sustainable Marketing and Ecological Concerns: Are We Doing Enough?

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Abstract

Today, businesses are important to the economic growth and community development. Yet, they may potentially inflict serious damage to the physical environment. Today, many business activities contribute to various ecological threats, such as global warming, climate change, air and water pollution, soil degradation, toxic waste, desertification and the extinction of species, depletion of resources, serious health threats, etc.

The aim of this article is to review the literature on current sustainable marketing practices, focusing on environmental threats and global concerns. The review examines the triple bottom-line paradigm of sustainable marketing behavior and green consumption. Several relevant issues are addressed such as greenwashing behavior. The discussion underlines the need for transparent sustainability reporting by businesses and its role in the corporate social responsibility. Furthermore, this paper explains that many companies continue to harm the environment, regardless of the triple bottom-line orientation. In the concluding remarks, this paper calls on legislators and policy makers around the world to take appropriate actions to promote sustainable business behavior, and encourage sustainable consumption by consumers, in order to preserve the environment and make the world a safe place for living.

Keywords: sustainability, marketing, Green consumption, environmental threats, Greenwashing, transparent sustainability reporting.

Systematic Review of Organizational Circular Thinking to enable the transition toward Circular Economy

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Abstract

The concept of circular economy (CE) is seen as a model of production and consumption with reduced resource use and extended in closed-loop life cycles. This concept is increasingly receiving attention in various domains and its implementation requires complex and dynamic changes in organisations. The continued participation of organisations in the linear (take, make, waste) economy will expose businesses to volatile resource prices and supply disruptions resulting from the scarcity of critical materials and geopolitical factors. Although there are persuasive reasons for organisations to transit and participate in the CE, unsubstantiated shreds of evidence such as the declining global resource recovery rate suggest limited practical implementations. The extant research falls short in terms of explaining the organisational side of CE transition from a change management perspective. Therefore, this systematic review investigates the most significant resources and capabilities that influence organisations to transform their businesses for participation in the CE. Starting from this premise, the present paper aims to offer an overview of the state of research and outline a promising research agenda.

Keywords: Circular economy; change management; organisational resources and capabilities; transition.

The Impact of Covid-19 on the Tourism Industry in Albania. An Econometric Analysis

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Abstract

Tourism is a social phenomenon and at the same time an important economic phenomenon. At the level of a national economy or a region, in general the effects of tourism are highly valued, precisely in terms of its impact on economic growth, price stability, balance of payments, fair and equitable distribution of national income as well as in creating quite a few jobs.

In this paper we will use an econometric analysis of the impact of covid 19 on the number of tourists in Albania to understand the gap that this pandemic has created in this industry.

This paper models the monthly series of the number of tourists using the SARIMA model to estimate the gap created by the pandemic situation, the estimates are performed in R with data obtained from INSTAT, Wordbank, WTTC.

Keywords: GAP, SARIMA, COVID-19

Introduction

Tourism is a social phenomenon and at the same time an important economic phenomenon. At the level of a national economy or a region, in general the effects of tourism are highly valued, precisely in terms of its impact on economic growth, price stability, the balance of payments, in the fair and equitable distribution of national income as well as in the creation of many jobs.

Albania is a beautiful and fascinating country. It has a wide range of attractions, cultural, historical and natural that are of great interest to international tourists. What is more important is that the country is still "authentic". It remains in to a large extent untouched by foreign influence, people live and work traditionally in most of the country and the local culture is expressed in a variety of ways on a regional basis, even from city to city. Albania is not an easy destination for to be understood by international markets. The country offers potential for dozens of different tourism activities in dozens of destinations.

During these last years, there is a recovery of the economy and politics is treating tourism as a promoter of the future economic development of the country. Albania has signed cooperation agreements in the field of tourism with various countries in Europe and the world. It is already a member of various international tourism organizations.

Types of Tourism in Albania:

Coastal Tourism:

Among the coastal beauties we mention the Albanian Riviera, where the coastal landscape is intertwined with the rugged mountain relief. While the Adriatic coast is characterized by sandy beaches and the depth of the sea that gradually increases, which makes it quite favorable for the family beach.

Mountain tourism

This type of tourism in Albania is attracting more and more the attention of foreign or even domestic tourists. Many projects are being created recently to support its development such as the 40-inn project.

We can not leave without mentioning Llogara Park, which is characterized by clean forest air, unique appearance and a variety of diverse products. The considerable height, the rugged terrain, which descends almost perpendicular to the sea and a mass of gentle sea winds, have made Llogara to be considered as one of the most complete runways for the development of the sport of aeronautics.

Cultural Tourism

In addition to natural potentials, Albania is very rich in cultural and historical potentials. We should not forget the centers with great historical values where the Castle of Kruja, Rozafa in Shkodra, Gjirokastra, Berat, Petrela in Tirana, Lëkura in Saranda, Tepelena, Ardenica Monastery, Durrës amphitheater, the center of ancient Illyrian "Apollonia" in Fier, the most ancient city of Albania Butrinti etc.

In this paper we will use an econometric analysis of the impact of covid 19 on the number of tourists in Albania to understand the gap that this pandemic has created in this industry.

Empirical review

The impact of tourism in a country is significant and many researchers have tried to find the best instruments to predict the number of tourists and the level of income provided by tourism. The growing potential of tourist movements depends on a number of variables including economic, demographic, technological, psychological, political, etc. It is impossible to identify all the relationships between the variables, enough to build a comprehensive analysis of the international tourism trend (Dritsakis & Agorastos, n.d.)

Song & Li and Witt (2005, 2008) (LI, H. Song & G., n.d.), have undertaken some very interesting studies in this field. The number of tourists, tourist expenses or income from tourism are used as dependent variables. While as explanatory variables are used national income, exchange rate, population, price of goods and services, cost of transport, etc. Most researchers use the CPI as the most appropriate representative of the tourist consumer price (Lim & McAleer, 2001; Song et al., 2003) (McAleer, Ch. Lim & M., N.d.). In most cases the data are annual, based on the argument for avoiding seasonality problems or lack of data for some of the variables. Also, for the most part, the result is not satisfactory. This is due to two factors: The small amount of data that leads to inaccurate estimates of parameters and the selection of variables that affect the overall result of the models (Botti, Peypoch, Randriamboarison & Solonandrasana, 2006). (Akis, 1998) points out, among other things, that as a result of building models based on few data and with many explanatory variables by most researchers, problems such as multicollinearity are generated and consequently unsatisfactory student tests.

According to (Shehu.V & Toshkallari. O, 2015) the time series of number of tourist arrivals is modeled as a logistic growth model and then it is modeled as ARIMA (2,1,2). The results of the Life Cycle of the Tourist Area of Albania showed that the middle of the Life Cycle is 2010, the duration of the growth time is 13.6 years and the Carrying Capacity is 4,886,858 tourists.

Time series model

The autoregressive integrated moving average model (ARIMA) has been proved to be an efficient and reliable method for dealing with the univariable time series. The emphasized advantage is that the ARIMA model does not need any additional variables just based on the values of its historic observations. And the required conditions previous to conduct the ARIMA model process should be satisfied with two conditions; one is that it should be a stationary time series, and the other is the recommended minimum amount of the sample data is at least 50 (G. E. Box and G. C. Tiao., 1975).

AutoRegressive (AR) models were first introduced by (Yule, 1926). Furthermore, they were supplemented by (Slutsky, 1937) who introduced the Moving Average (MA) models. It was (Wold, 1938) who combined both the AR and MA models and showed that ARMA processes could be used to model all stationary time series as long as the proper order of AR is p, and q, the number of terms MA to be appropriately specified. So a time series X_t can be modeled as a combination of past values x_t and / or past error ϵ_t , The general form of the ARIMA model (p, d, q) is

$$\Delta^d Y_t = c + \varphi_1 Y_{t-1} + \varphi_2 Y_{t-2} + \dots + \varphi_p Y_{t-p} + \theta_1 \epsilon_{t-1} + \theta_2 \epsilon_{t-2} + \dots + \theta_q \epsilon_{t-q} + \epsilon_t$$

The approach proposed by (Box, G.E.P., and Jenkins, G., 1970) became known as the Box-Jenkins methodology for ARIMA models, where the letter "I", between AR and MA, stood for the word "integrated". ARIMA models and the Box-Jenkins methodology became very popular among academics in the 1970s, especially when demonstrated through empirical studies (Cooper, 1972; Nelson, 1972; Elliot, 1973; Narasimham et al., 1974; McWhorter, 1975; Armstrong, 1978) that they can surpass classical econometrics with large and complex model models, known at the time, in a variety of situations.

Autoregressive (AR) model

An autoregressive model of order p, AR (p), can be expressed as:

$$Y_t = c + \varphi_1 Y_{t-1} + \varphi_2 Y_{t-2} + \dots + \varphi_p Y_{t-p} + \epsilon_t \quad (3.1)$$

where ϵ_t is the error term in the equation; where ϵ_t a white noise process, a sequence of independently and identically distributed (iid) random variables with $E(\epsilon_t) = 0$ and $var(\epsilon_t) = \sigma^2$; i.e. $\epsilon_t \sim iidN(0, \sigma^2)$. In this model, all previous values can have additive effects on this level Y_t and so on; so it's a long-term memory model.

Moving-average (MA) model

A time series $\{Y_t\}$ is said to be a moving-average process of order q, MA (q), if:

$$Y_t = \theta_1 \epsilon_{t-1} + \theta_2 \epsilon_{t-2} + \dots + \theta_q \epsilon_{t-q} + \epsilon_t \quad (3.2)$$

This model is expressed in terms of past errors as explanatory variables. Therefore only q errors will effect on Yt, however higher order errors don't effect on Yt; this means that it's a short memory model.

Autoregressive moving-average (ARMA) model

A time series {Yt} is said to follow an autoregressive moving-average process of order p and q, ARMA (p, q), process if:

$$Y_t = c + \varphi_1 Y_{t-1} + \varphi_2 Y_{t-2} + \dots + \varphi_p Y_{t-p} + \theta_1 \varepsilon_{t-1} + \theta_2 \varepsilon_{t-2} + \dots + \theta_q \varepsilon_{t-q} + \varepsilon_t \quad (3.3)$$

ARIMA Models

The ARMA models can further be extended to non-stationary series by allowing the differencing of the data series resulting to ARIMA models. The general non-seasonal model is known as ARIMA (p, d, q): where with three parameters; p is the order of autoregressive, d is the degree of differencing, and q is the order of moving-average.

$$\Delta^d Y_t = c + \varphi_1 Y_{t-1} + \varphi_2 Y_{t-2} + \dots + \varphi_p Y_{t-p} + \theta_1 \varepsilon_{t-1} + \theta_2 \varepsilon_{t-2} + \dots + \theta_q \varepsilon_{t-q} + \varepsilon_t \quad (3.4)$$

where $\Delta Y_t = Y_t - Y_{t-1}$

If the data have seasonal influences the models will be in a wider form and are called SARIMA models (p, d, q) (P, D, Q) k, where P, D and Q are the respective orders of AR, I and MA but for seoznality where k is the frequency of the series (which for us will be monthly for arrival number and quarterly for GDP)

Model estimation: using computation algorithms to arrive at coefficients that best fit the selected ARIMA model. The most common methods use Maximum Likelihood Estimation (MLE) estimation.

We use three evaluation criteria to assess the performance of the model(Wayne A. Woodward, Henry L. Gray, Alan C. Elliott, 2017), respectively, are the mean squared error (MSE), the root mean square error (RMSE), MAE the mean absolute error and the mean absolute percentage error (MAPE); the formulations are detailed as follows:

$$\begin{aligned} MAPE &= \frac{100}{n} \sum_{i=1}^n \left| \frac{Y_t - F_t}{Y_t} \right| \\ MAE &= \frac{1}{n} \sum_{i=1}^n |Y_t - F_t| \\ MSE &= \frac{1}{n} \sum_{i=1}^n (Y_t - F_t)^2 \\ RMSE &= \sqrt{\frac{1}{n} \sum_{i=1}^n (Y_t - F_t)^2} \end{aligned} \quad (3.5)$$

Where Yt are the current values of the series and Ft are the predicted values of the series.

Empirical analysis of the number of tourists

Albania registered a total of 6.4 million tourists in 2019, ranking 60th in the world in absolute terms and having a significant increase from a year ago. Putting the numbers of tourists in relation to the population of Albania, the result is a much more comparable picture: With 2.3 tourists per capita, Albania was ranked 46th in the world. In Southern Europe, it ranked 8th.

The largest increase occurred in 1999 compared to 1998 with 101% and the largest decrease in 1997 compared to 1996 with 58.53% this as a result of the political crisis that Albania is going through and the next decrease in 2020 versus 2019 with 57.8% this as a consequence of the covid-19 pandemic. In 2020 the number of tourists reached 2.7 million where most of them are from the Balkan countries, namely came from Kosovo - 1.4 million, North Macedonia - 370,135, Greece - 203,445, Montenegro - 174,233 and Italy - 123,489.

Referring to the descriptive statistics of the number of citizens entering Albania for this period, we have that in Albania every month enters an average of 394803 individuals for tourism or daily visits and an average of 7193 for business or profession. The smallest number of individuals in the personal category is 4102 individuals and corresponds to April 2020 and the highest number is 1548855 which corresponds to August 2019. While for the Business category we have the lowest number of 1060 which corresponds to April 2021 and the highest number high 12409 corresponding to October 2020.

Table Descriptive statistics

	<i>Personal tourist</i>	<i>Business tourist</i>
Mean	394803	7193
Standard Error	39423	283
Median	280100	7287
Standard Deviation	320275	2301

Sample Variance	102576085346	5295180
Kurtosis	4	3
Skewness	2	0
Range	1544753	11349
Minimum	4102	1060
Maximum	1548855	12409

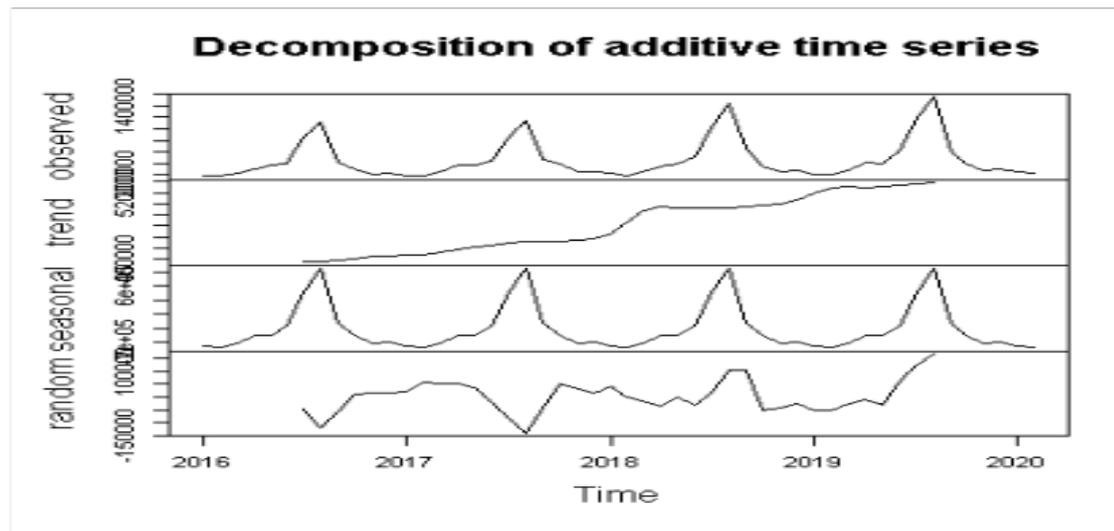
Source: Instat

Author calculation

The number of tourists entering for personal needs has a greater dispersion and referring to the values of kurtosis which is 4 and Skewness which is 2 clearly shows that this variable is not distributed normally and has a pronounced positive asymmetry.

Below we are presenting the trend of citizens entering Albania for the period 2016-2021.

Figure



Source: Instat(2022) and Author calculations

The trend of individuals entering Albania is a time series clearly with seasonal influences. In August we have the highest number of entries and in February the lowest number of entries. In the last two years we have a significant decrease in the number of entries as a result of the impact situation of Covid-19. The number of entries in August 2020 is 73% lower than the number of entries in August 2019. This is a major decline and certainly a major impact on the economy.

A report from the Institute of Statistics states that before COVID-19, the tourism sector in 2019 employed about 64,000 people and that it contributed about 3.23 percent to the country's GNP.

However, tourism was hit hard in 2020 due to restrictions imposed by the COVID-19 pandemic and the year with far fewer Albanian or foreign visitors.

The number of foreign nationals who visited Albania in 2020 was 58.5 percent less than compared to 2019, 2.6 million, according to another report from the Institute of Statistics

If we refer to the series of the number of tourists for the period before the covid pandemic -19, ie the period January 2016 to February 2020 after in March 2020 in Albania the restrictive rules were set and to model it as a time series of ARIMA or SARIMA type.

Using R we have estimated that the number of tourists in Albania is an ARIMA model (0,0,1) (0,1,0) [12]

Table The estimate model

Series: Nrrarrival
ARIMA(0,0,1)(0,1,0)[12]
Coefficients:
ma1 drift
0.4701 3748.653
s.e. 0.1193 1200.925

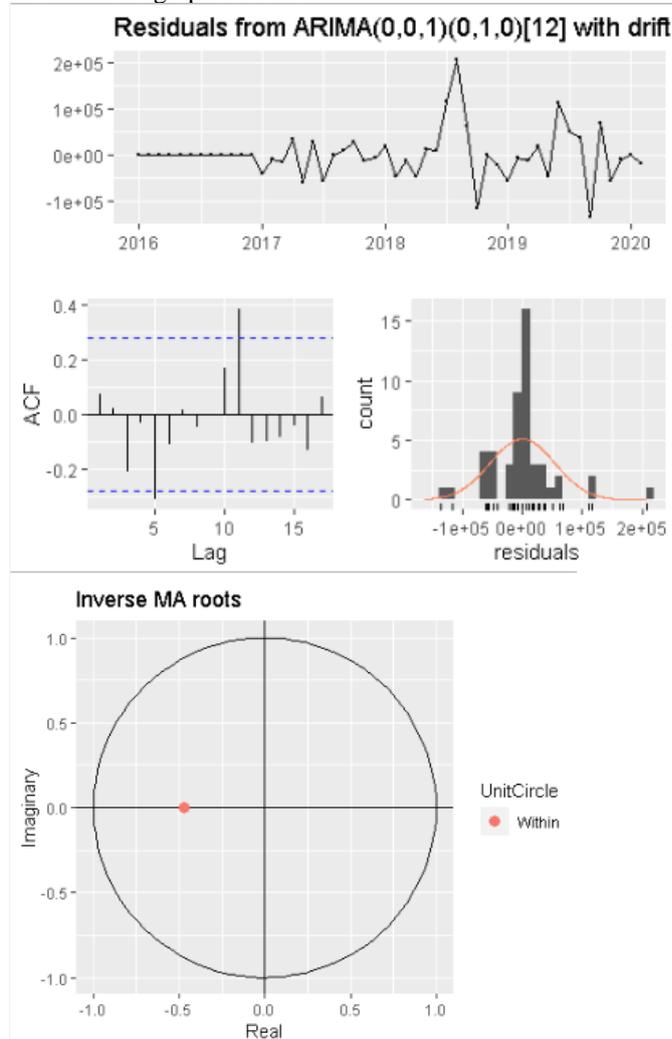
Training set error measures:

	ME	RMSE	MAE	MPE	MAPE	MASE	ACF1
Training set	398.4898	53116.24	32167.3	-2.692128	7.502924	0.5962312	0.0741412

Source: Instat

Author calculation

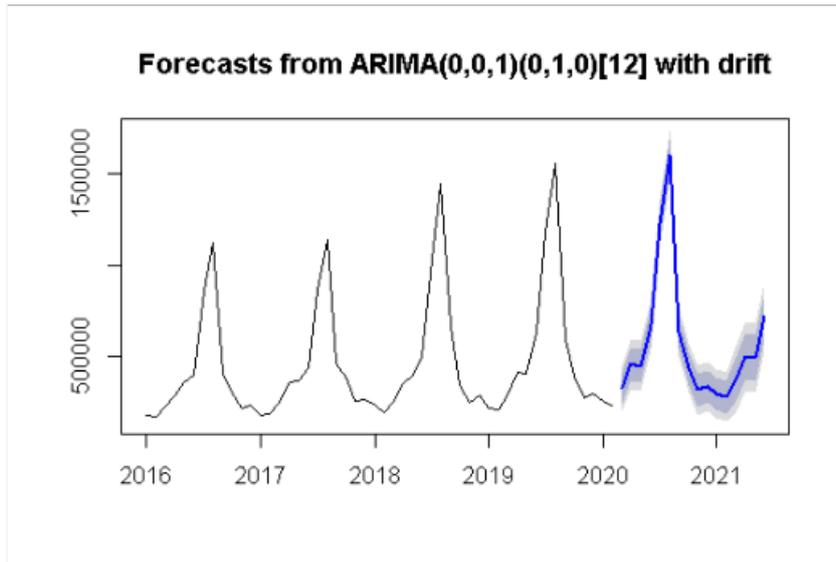
The estimated model has residues with normal distribution and iverse roots fall within the unit circle, this is shown in the graphs below.



We are using this model to predict the values for the number of tourists in the following periods until June 2021 which is a period of 16 months (of course this is a long forecast period and forecasts have expected errors in their values).

The predictions realized by the evaluated model are presented in the following graph:

Figure Forecast for number of tourists



Source: Instat

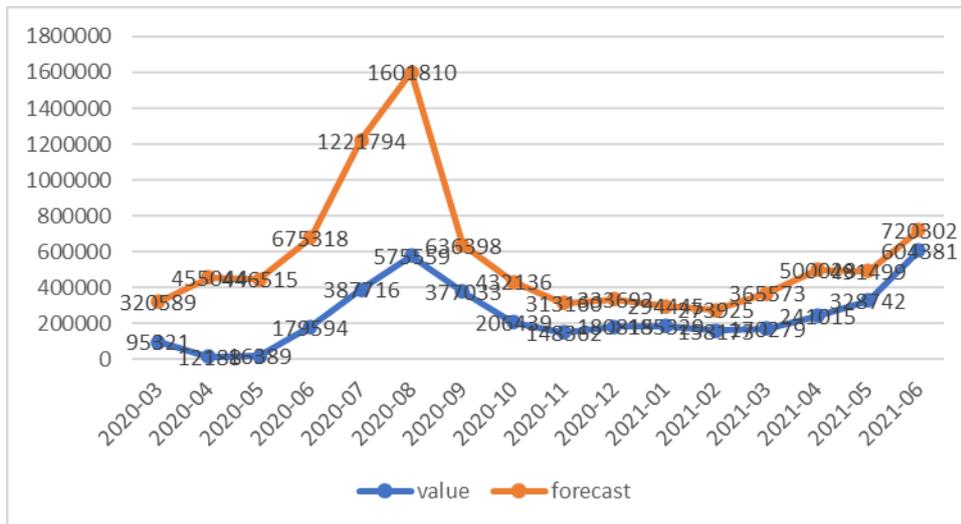
Author calculation

Forecasts follow the growing trend while respecting seasonal impacts.

Now let us compare the real introductions made in this period and those that are predicted by the estimated model to understand the gap left as a result of the pandemic.

In the graph below we see the difference between the two series for the pandemic period where the biggest difference is exactly the peak of the 2020 season where the closing of the economy was greater. Although at this time tourists from Kosovo seemed to be the saviors of the tourism industry in Albania, it is still impossible to reach those borders without feeling in the economy .

Figure:



It is clear that the evaluated model has followed the rhythm of the series but it also clearly shows the boom that has left the pandemic in the number of tourists visiting Albania and consequently in its economy.

These two years of the pandemic there was an increase in tourists coming from the region and there are several reasons why we think this year tourism will be sustainable for the sole reason that the pandemic brought some innovations, first: people moved with their vehicles in nearby territories and this made Albania resist the pandemic. But the figures for the coming year seem to be more optimistic.

In January 2022, it is noticed that citizens with Kosovar citizenship have a decrease compared to the previous year. The table shows that there is an increase for citizens from Greece, Italy and England. Below you will find the table of entry of foreign visitors by citizenship:

Countries January 2020 January 2021 January 2022 Change in (%) Kosovo.

Country	January 2020	January 2021	January 2022	Change in (%)
Kosovo	77.632	87.690	63.367	-27.7
Northern Macedonia	38.034	34.293	32.558	-5.1
Greece	38.743	5.018	18.961	277.9
Italy	21.067	9.929	21.281	114.3
England	5.559	1.549	4.586	195.5
Montenegro	30.890	24.214	21.330	-11.9
Poland	546	223	470	110.8
USA	4.059	1.954	3.622	85.4
Spain	467	126	605	380.2
Germany	3.274	2.952	3.517	16.8
Switzerland	1.626	2.394	1.585	-33.8
Other	27.564	14.987	22.355	49.2
Total	249.461	185.329	194.237	4.8

Source: Instat

For January 2022, we have an increase of 134.1% of visitors to our institutions cultural compared to the first month of last year (instat). The lifting of anticovid measures is expected to affect this year to have a larger number of tourists from the region, despite the scenario in Albania this year will not come tourists as from countries that are affected by the war in Ukraine.

Conclusion

Tourism is a social phenomenon and at the same time an important economic phenomenon.

Albania has a wide range of attractions, cultural, historical and natural that constitute a great interest for international tourists.

According to the econometric analysis, it turned out that Covid 19 had a great impact on the number of tourists in Albania. Referring to the trend of individuals entering Albania which is a time series clearly with seasonal influences we see a large decrease in this period and a major impact on the country's economy

Tourism was hit hard in 2020 due to restrictions imposed by the COVID-19 pandemic and the year with far fewer Albanian or foreign visitors.

If we refer to the series of the number of tourists for the period before the pandemic covid -19 and after it we see the difference between the two series for the pandemic period where the biggest difference is exactly the peak of the 2020 season where the economic closure was greater. It is clear that the evaluated model has followed the rhythm of the series but it is also clear that the gap left by the pandemic in the number of tourists visiting Albania and consequently in its economy.

These two years of the pandemic there was an increase in tourists coming from the region and there are several reasons why we think this year tourism will be sustainable for the sole reason that the pandemic brought some innovations and one of these: people moved by means of in nearby territories and this made Albania resist the pandemic. But the figures for the coming year seem to be more optimistic.

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The Impact of Holacracy on Employees' Motivation at Organizations

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Abstract

Holacracy is a decentralized management style where employees are flexible to organize their work and to make decision by themselves. Holacracy ruins hierarchy, creates equality, flexibility, and autonomy.

Today some for-profit and non-profit companies implement holacracy, so they find this management style successful. But there is a question: Does it really work? In theory some points seem so attractive and ideal but what about its implementation? In this paper I will show the effects of hierarchy on employees' motivation practically through the example of Zappos Company.

There are many advantages, but at the time disadvantages of this method. So this management style can both increase and decrease employees' motivation. The purpose of this paper is to describe how holacracy affects to employees' motivation.

Keywords: holacracy, motivation, self-management, autonomy, authority

Introduction

For each company employees' motivation is one of the main focuses, so employees' motivation directly affects productivity at organizations. Management styles at organizations are one of the main factors impact on employees' motivation. Holacracy is a new management style implementing at organizations, otherwise it can be called self-organized or self-management. Increasing competition makes organizations to be more productive and efficient to compete with rising numbers of rivals. Today not just for improvement, but to survive accepting new challenges is so important, otherwise failure is inescapable. Holacracy brings new breath to companies, makes them to be more agile, intuitive and efficient. Too much hierarchy can cause wasting time, money and other resources.

There are not just advantages of holacracy, but at the same time disadvantages on employees' motivation. So, in this paper I will demonstrate the positive and negative effects of holacracy on employees' motivation.

Holacracy is a new management style. Some authors says it comes from self-managed work team, but it is more innovative and more ambitious form of it. Holacracy is a pastiche of ideas from networked, project-based organizations, self managed work teams, decision science and personal effectiveness practices. [3, p.]

Today majority of people, especially the young tend to be self-directed, so they do not want to be directed by others. Direction makes some employees feel under pressure, not flexible. But holacracy is self-organizing management style, from this viewpoint this method can be ideal model for who want to work freely, not to be managed by others.

The practices show that at some organizations autonomy increases employees' creativity, so autonomy make the ideas come to the surface. Because in this system employees do not hesitate to express their ideas, to implement new activities. Now they are not obliged to expect for someone's confirmation, they are free to make their own work decisions. Another positive psychological impact of holacracy is because of employees are not directed, make their own decision they feel like it is their own business, they do not think they work for others so much.

As this management style increases equality among employees through avoiding of hierarchy, this situation can cause increasing of employees' motivation at the same time.

According to practices holacracy makes individuals become more responsible. Because in this system people there is not any directions that is why all employees carry their own responsibilities about decision making, changes and any action. So Holacracy gives employees more control over processes and authority about

their work. According to Zappos's CEO Tony Hsieh, Holacracy makes individuals more responsible for their own thoughts and actions. [7]

As in holacracy there are not assigned roles and responsibilities employees are flexible to take actions on different tasks, and at the time it increases mobility among teams, so employees can freely move from one team to another. After the improvement technology, increasing specialization and other factors increases monotony at a lot of organizations. As we know multitasking is one the killers of monotony at workplaces holacracy causes decreasing of it. In time of some employees suffering from monotony this system is savior for them.

Holacracy increases self-confidence, too. So psychology shows to make their own decisions increases self-confidence on people. As people carry their own responsibilities, so make their own decisions about their work, self-directed, if needs any changes make it by themselves, it makes people feel more confident.

But there are some disadvantages of holacracy, too. So self-organizing can threaten the employees who has always worked under direction. And on the other hand, as holacracy avoids the hierarchy status becomes meaningless and this process demotivate people at organizations whose main motivation is power and status.

The site: Holacracy.org informs that approximately over 300 companies use this management style. [5] Zappos is one of them. The CEO of Zappos say that they can leave the company and they will pay the compensation of three months. As a result approximately 18 percent of employees leave the company. It is interesting that most of them were in managerial positions. This situation shows that impact of holacracy is not always good on employees' motivation, specially who have high positions.

Each person has own character, motivation depends on persons. For some employees the absence of hierarchy, stratification can be one of the main motivational factors, but for others this factor can be demotivation or for some managerial position is self-actualization, through managerial position they can think they have already proved themselves. Or for the some it is a kind of promotion, from their point, managerial position could be considered an award of his/her hard work. The absence of hierarchy means equality, absence of power, but some people's main motivation is those factors.

From another point, almost the absence of direction can cause the chaos. Practices show specially in great companies it can be so hard to manage the processes under this management system.

One of the main questions about holacracy is "Don't we need any managers?" The answer is "Both yes and no". So, in traditional management styles there are official managers who can lead people, give directions, make final decision, changes and etc. You can ask each company needs such kind of and more activities about managing. If there are not official managers it does not mean there is nobody to do managerial actions. Here everybody has authority to make decisions about their work.

The Company Zappos has been using Holacracy management style since 2014. They acclaim they do not think about to change their management style, still continue to implement it.

Conclusion

Holacracy has both advantages and disadvantages on employees' motivation. It is hard to say exactly holacracy is a good or bad method for managing. There are a lot of objective and subjective advantages and disadvantages of holacracy method. First of all, the characteristics of the audience have to be taken into consideration that they are ready for this system or not. So depending on characteristics of employees and the capacity of organizations the impact of holacracy results differently. It is not easy process to adapt after traditional management system to absolutely new management style. Which employees prefer autonomy at their work, tend to be more creative, initiative for those holacracy is a great opportunity to express themselves and show their potential. But for those whom adapted to traditional management style, are not open to new challenges, tend to be directed, do not have passion and have ambitions about positions (especially managerial positions) for them holacracy can demotivate them, and as a result employees' productivity can decrease and even some employees can leave the company.

As we learned about motivation not each factors impact on people samely. We all motivation is different. That is why almost there are a lot of advantages of holacracy, today not all employees and organizations are ready for this management system.

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Gender-Based Challenges Women Face in the Entrepreneurship Ecosystem

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Abstract

Being a woman entrepreneur means you face double challenges. The first type of challenges comes from the nature of entrepreneurship. The second set of challenges comes from gender bias.

The challenges comes from the nature of entrepreneurship harder for women entrepreneurs solely because of their gender and the gender roles prescribed to women in our societies. “Women and men have different career patterns because women continue to take major responsibility for family work” (Loscocco et al., 2009, p.61). For instance, capital is not the only factor to affect the success of entrepreneurship. Network play an increasingly important role in this context. Even when they have the access network, these networks are dominated by men. Not surprisingly, women entrepreneurs have many disadvantages as a result.

This paper aims to explore, understand, and interpret these the gender- based challenges faced by women entrepreneurs globally and in Turkey. Reviewing these gender related entrepreneurship challenges comparatively is important because it can help us devise solutions that minimize the challenges faced by women entrepreneurs so that they can have an equal shot when engaging in this type of business.

An Investigation of Teachers' Perceptions and Experiences of Moral Education in Secondary Schools in England

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Abstract

In the literature, there are different theories and arguments about what moral education is and what is the role of schools in moral education. Briefly, morality and its education seem in relation to values, virtues and character development, the codes of the society, flourishing of the good and development of autonomy. However, although there are many theories about moral education and the role of teachers, there is a lack of empirical works asking teachers' views and practices in relation to it. This research aims to contribute to the literature from an empirical perspective by asking secondary school teachers' perceptions and experiences in teaching moral education.

In this research, within the theoretical constructions, I focus on a form of moral education provided by government policy in English school. I aim to find out how teachers see their responsibilities in teaching moral education and how teachers from across the curriculum subjects teach moral education in their practices. For this aim, I conducted 18 online semi-structured interviews with secondary school teachers in England from a variety of subject areas, including core subjects, humanities, languages and more. In order to open up discussions and make the data collection process more effective, I have implemented a stimulus material showing current English policy requirements, which could be another contribution to the literature as a new online interview method during the period of epidemic. The initial findings show that teachers see themselves as responsible adults to teach about right and wrong or good and bad, to pass on the values their community holds dear, and to bring up autonomous individuals who can make judgements about their decisions.

Keywords: Moral education, Teachers' perspectives, Moral education in secondary schools, England.

Analysis of Economic Policy that Promotes Innovations in Agriculture, through Industry 4.0 and its Implementation in Georgia

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Abstract

Innovation is one of the main directions of economic development in the modern world. Innovation gives economic entities, including agriculture, a competitive advantage in both the local and international markets, which ultimately ensures the country's economic sustainability. According to a 2017 report by the Food and Agriculture Organization of the United Nations (FAO), The Future of Food and Agriculture, demand for food and agriculture will increase by 50% from 2012 to 2050. To meet the growing demand it is necessary to increase agricultural productivity. That is why it is important to introduce innovations in agriculture so that supply problems do not arise in the face of increased demand.

The research includes a study of the situation in Georgia's agriculture and the creation of an economic policy framework to promote innovation. The current situation in the field does not give grounds for optimism. According to the data published by the National Statistics Office of Georgia, the share of rural, forestry and fish farming in the gross domestic product (GDP) is only 7.4%, while the number of people employed in this field is more than 21% of employees. Also noteworthy is the fact that the value of the product created by one person employed in the field does not exceed 12 thousand GEL. This fact indicates that concrete, correct reforms are needed in Georgia's agriculture, and at the same time it is necessary to introduce innovations, which will ultimately increase productivity. At the same time, it is necessary for Georgia's agriculture to meet the challenges of the fourth industrial revolution.

The research has several purposes. One of them is to assess the level of agricultural development in Georgia, both in comparison with developing and developed countries. The second one is to establish a connection between the existing legislation in Georgia and the development of agriculture. The main purpose of the research is based on the above objectives and involves statistical and econometric methods to determine what impact innovation can have on individual agricultural sectors and how it will affect the economic development of the country.

Keywords: Innovation, Agricultural Policy.

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